- FML2D_TAG
- FML2D_unique
- unique_count2
- var_fill
- K2
- K3
- L2
- L3

5. From the fields listed above, VHA loaded the following variables that were specifically used in completing the matching process:

- vuid
- GDN
- FMLD
- FML1D
- FML2D
- AGDN
- AGDNlast
- AGD
- ADN
- AGN
- SSN
- ssn4_str
- last_fix
- first_fix
- middle_initial
- dob_str
- SDZ
- SND
- var_fill
- K2
- K3
- L2
- L3

6. VHA executed the data preparation and comparison steps, attached as Ex. A, that were provided by the United States Department of Justice.

7. Through this process, VHA attempted to match particular combinations of identifying information for Texas registered voters (*e.g.*, first and last name, gender, and date of birth) with the same or related combinations of identifying information with respect to holders of a Veteran Identification Card. For each particular combination, VHA identified instances where the identifying information for a Texas registered voter matched with the same or related combinations of identifying information for one or more holders of a Veteran Identification Card. The frequencies of any missing values in the underlying VHA dataset are provided in Ex. B.

8. For each sweep through the relevant VHA dataset, we appended a column to the Texas data that VHA loaded to indicate, on a record-by-record basis, the output of the database

comparisons on all of the requested combinations where there was one or more matches. In total, out of the 13,564,420 records available to be matched, VHA found matches on one or more combinations for 299,320 voter records.

9. On April 30, 2014, VHA transferred responsive data to the Department of Justice, in the form of a 117 megabyte text (.txt) file, with vertical bar delimiters. This file contained the match results for each of the 299,320 records where VHA found one or more matches. The voter file records where no matches were found were not returned.

10. The results of each sweep, as described in Ex. A, can be found in the following columns of the data VHA returned to the Department of Justice:

    a. "VHA_USA" contains results of the Stage 1, Step 3.1.1, Combination A match;

    b. "VHA_USB" contains results of the Stage 1, Step 3.1.2, Combination B match;

    c. "VHA_USC"contains results of the Stage 1, Step 3.1.2, Combination C match;

    d. "VHA_USD" contains results of the Stage 1, Step 3.1.2, Combination D match;

    e. "VHA_USE" contains results of the Stage 1, Step 3.1.2, Combination E match;

    f. "VHA_USF" contains results of the Stage 1, Step 3.1.2, Combination F match;

    g. "VHA_USG" contains results of the Stage 2, Step 3.2.1, Combination G match;

    h. "VHA_USH" contains results of the Stage 2, Step 3.2.2, Combination H match;

    i. "VHA_USI" contains results of the Stage 2, Step 3.2.2, Combination I match;

    j. "VHA_USSSN" contains results of the Stage 2, Step 3.2.2, nine-digit social security number match;

    k. "VHA_USK2"contains results of the Stage 2, Step 3.2.3, Combination K to G match;

    l. "VHA_USK" contains results of the Stage 2, Step 3.2.3, Combination K match;

    m. "VHA_USK3" contains results of the Stage 2, Step 3.2.3, Combination K to L match;

n. "VHA_USL2"contains results of the Stage 2, Step 3.2.4, Combination L to G match;

o. "VHA_USL" contains results of the Stage 2, Step 3.2.4, Combination L match;

p. "VHA_USL3"contains results of the Stage 2, Step 3.2.4, Combination L to K match;

q. "VHA_USF_NW" contains results of the Stage 3, Step 3.3.1, Combination F match;

r. "VHA_USG_NW" contains results of the Stage 3, Step 3.3.2, Combination G match;

s. "VHA_USI_NW" contains results of the Stage 3, Step 3.3.2, Combination I match;

t. "VHA_USSSN_NW" contains results of the Stage 3, Step 3.3.2, nine-digit social security number match;

u. "VHA_USK2_NW" contains results of the Stage 3, Step 3.3.3, Combination K to G match;

v. "VHA_USK_NW" contains results of the Stage 2, Step 3.3.3, Combination K match;

w. "VHA_USK3_NW" contains results of the Stage 2, Step 3.3.3, Combination K to L match;

x. "VHA_USL2_NW" contains results of the Stage 3, Step 3.3.4, Combination L to G match;

y. "VHA_USL_NW" contains results of the Stage 3, Step 3.3.4, Combination L match;

z. "VHA_USL3_NW" contains results of the Stage 3, Step 3.3.4, Combination L to K match;

aa. "texas1" contains results of the Stage 4, Step 3.4.1, Sweep 1 match;

bb. "texas2" contains results of the Stage 4, Step 3.4.2, Sweep 2 match;

cc. "texas3" contains results of the Stage 4, Step 3.4.3, Sweep 3 match; and

dd. "texas4" contains results of the Stage 4, Step 3.4.4, Sweep 4 match.

11. No other matching comparisons between the Texas data and data from VHA were undertaken beyond those set forth in Ex. A.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on May 27, 2014.

Exhibit A

***United States v. Texas*: Federal Agency Algorithm Summary**

This document summarizes the database matches that both the United States and all other plaintiffs and the State of Texas have requested from Federal Agencies as part of the *Veasey v. Perry*/*United States v. Texas* litigation (S.D. Tex).

The matching process proceeds in three parts, which are explained in detail below. *First*, databases are prepared and standardized. *Second*, identifier values are constructed by combining multiple individual fields. *Third*, the United States' one-to-many matches and the State of Texas's many-to-many matches are conducted between databases.

PART I: DATABASE PREPARATION

Stage 1: Extraction of Available Data from Federal Identification & Disability Databases

Step 1.1.1: Extract complete name into separate first name, middle name, and last name fields.

Step 1.1.2: Extract date of birth.

Step 1.1.3: Extract gender.

Step 1.1.4: Extract residential address and mailing address.

Step 1.1.5: Extract social security number.

Step 1.1.6: Extract Texas driver license number (only if present in Federal database).

Stage 2: Separate Valid Identification and Disability Records

Step 1.2.1: Remove records from identification database extracts that indicate that an ID has been revoked or has expired more than 60 days before the date of the TEAM database snapshot (which is January 15, 2014).

Step 1.2.2: Remove records from disability database extracts that do not indicate current disability status or indicate a Veterans Administration disability rating of less than 50%.

Stage 3: Diagnostics

Step 1.3.1: Report the frequency of missing values for each field.

Step 1.3.2: Report the frequencies of invalid Social Security numbers, such as 111111111 and 123456789.

Step 1.3.3: Report the frequencies of likely invalid dates of birth, such as January 1, 1901 and November 11, 1911.

Stage 4: Standardize Last Name

Step 1.4.1: Remove last name suffixes that are contained within the last name field, rather than a distinct suffix field. *E.g.*, <Smith Jr.> becomes <Smith>.

Step 1.4.2: For last names containing hyphens, populate separate last name fields for all parts of the last name. *E.g.*, the last name <Smith-Jones> would have the value <Smith> entered into a LastName1 field and the value <Jones> entered into a LastName2 field.

Step 1.4.3: Remove spaces, hyphens, periods, and apostrophes from all last name fields and convert all letters to uppercase. *E.g.*, <O'Connor> becomes <OCONNOR> and <Smith-Jones> becomes <SMITHJONES>.

Step 1.4.4: Code all missing values as blank fields.

Stage 5: Standardize First Name and Middle Name

Step 1.5.1: Remove spaces, hyphens, periods, and apostrophes from the first name field and convert all letters to uppercase. *E.g.*, <Jean-Paul> becomes <JEANPAUL>.

Step 1.5.2: Parse the first letter of the middle name (if available) and use it to populate a middle initial field. *E.g.*, <John> would yield <J>.[1]

Step 1.5.3: Code all missing values as blank fields.

Stage 6: Standardize Date of Birth

Step 1.6.1: Convert the date of birth to an eight-digit string of MMDDYYYY.

Step 1.6.2: Code all missing values as blank fields.

Stage 7: Standardize Gender

Step 1.7.1: Code gender as a string of 1 for females and 0 for males.

Step 1.7.2: Fill missing gender values using the most common gender value for the first name associated with a record. *E.g.*, if 99% of records with first name <JOHN> are listed as male, assign the male identifier to all records with first name <JOHN> and no listed gender.

Step 1.7.3: If missing values remain, code all missing values as blank fields.

[1] The U.S. Department of State does not maintain a separate field for middle names in its database of U.S. Passport and Passport Card holders. Instead, both first and middle name may be stored in the first name field. For this database, the following rule will be applied: treat the first word in the first name field as the first name, and treat the first letter following the first space as the middle initial.

Stage 8: Standardize Address

Step 1.8.1: Convert the residential ZIP code to a string if it is stored as a numeric field.

Step 1.8.2: Where the residential address ZIP code is blank, populate that field with the value in the mailing address ZIP code field, if available.[2]

Step 1.8.3: Truncate the residential ZIP code field to the first five digits. *E.g.*, <77777-1234> becomes <77777>.

Step 1.8.4: Where the residential address field is blank, populate that field with the value in the mailing address field, if available.

Step 1.8.5: Where address field containing street address begins with a street number, isolate the street number. *E.g.*, <123 Main Street> becomes <123>.

Step 1.8.6: Where the address field begins with recognized strings indicating a mail box, eliminate strings to isolate the box number. *E.g.*, <PO Box 444> becomes <444>.

Step 1.8.7: If missing values remain, code all missing values as blank fields.

Stage 9: Standardize Social Security Number

Step 1.9.1: Convert the social security number to a string if it is stored as a numeric field.

Step 1.9.2: Using full social security number, check for invalid SSNs. In the case of invalid SSNs, code as missing. *E.g.*, <123456789> becomes <>.

[2] For purposes of this database matching protocol, the only address fields utilized with respect to data regarding U.S. Passports and U.S. Passport Cards are those regarding mailing addresses.

Step 1.9.3: Extract the last four digits of full social security number as a four-character string and use them to populate a separate SSN4 field.

Step 1.9.4: Code all missing values as blank fields.

PART II: DATABASE PREPARATION

Stage 1: Construct Primary Identifier Variables for United States' One-to-Many Sweeps

Step 2.1.1: Create Combination A: First Name + Last Name + Gender + DOB + Residential ZIP + Residential Street Number. *E.g.*, the separate fields <JEAN>, <SMITH>, <0>, <01011950>, <77777>, and <123> are combined to a single field <JEANSMITH001011950777771 23>.[3]

Step 2.1.2: Create Combination B: Last Name + Gender + DOB + Residential ZIP + Residential Street Number.

Step 2.1.3: Create Combination C: Gender + Date of Birth + Residential ZIP + Residential Street Number.

Step 2.1.4: Create Combination D: First Name + Last Name + Date of Birth + Residential ZIP + Residential Street Number.

Step 2.1.5: Create Combination E: First Name + Last Name + Gender + Residential ZIP + Residential Street Number.

Step 2.1.6: Create Combination F: First Name + Last Name + Gender + DOB.

Step 2.1.7: Create Combination M: Texas Driver License Number (where available).

[3] For the U.S. Department of State only, the name portion of any combination is truncated if it is more than 32 characters long.

Exhibit A

Stage 2: Construct Secondary Identifier Variables for United States' One-to-Many Sweeps

Step 2.2.1: Create Combination G: First Name + Middle Initial + Last Name + Date of Birth.[4]

Step 2.2.2: Create Combination H: SSN4 + Date of Birth + Residential ZIP.

Step 2.2.3: Create Combination I: SSN4 + First Name + Last Name + Date of Birth.

Step 2.2.4: Create Combination K: First Name + Last Name 1 + Middle Initial + Date of Birth.

Step 2.2.5: Create Combination L: First Name + Last Name 2 + Middle Initial + Date of Birth.

Step 2.2.6: Full Social Security Number.

Stage 3: Construct Identifiers Used Only For Texas's Many-to-Many Sweeps

Step 2.3.1: Create Combination for Texas's Sweep 1: SSN4 + Last Name + DOB.

Step 2.3.2: Create Combination for Texas's Sweep 3: First Name + Last Name + DOB

Step 2.3.3: Create Combination for Texas's Sweep 4: First Name + Middle Initial + Last Name + DOB

Note: Combinations for Texas's Sweeps 1 and 3 do not already exist as pre-made fields in the TEAM database extract but instead must be created from the underlying TEAM database fields, in addition to being constructed on the Federal database side. Texas's Sweep 4 is equivalent to

[4] Only for the State Department, create three further variations of Combination G created using the State Department's "LFMName" field which contains Last, First, and Middle Names, in that order, truncated to a maximum length of 32 characters. Combination G1 is DOB + LFMName; Combination G2 is DOB + First two words of LFMName; and Combination G3 is DOB + First two words of LFMName + First character of third word of LFMName.

the combination for the United States' Combination G. Texas's Sweep 2 is on full 9 social security number.[5]

Stage 4: Establish Identifier Uniqueness For Combinations A - L

Step 2.4.1: Generate a field that establishes the uniqueness of each identifier variable. For federal databases, for each combination A-L, generate a field that establishes uniqueness among only Texas records and a field that establishes uniqueness among nationwide records. *E.g.*, if only one record has the string <JEANSMITH01011950012377777> for Combination A, populate the uniqueness field for Combination A for that record as <1>. If four records have the string <JOHNSMITHA0101950> for Combination G, populate the uniqueness field for Combination G for each of those records as <2>, which indicates any number greater than one.

[5] For purposes of matching to U.S. Department of State Passport and Passport Card holder data, Texas's Sweep 3 and Sweep 4 are as follows: Sweep 3: Last Name + First Name (restricted to 32 characters) + DOB. Sweep 4: Last Name + First Name + Middle Initial (restricted to 32 characters) + DOB.

Exhibit A

PART III: MATCH DATABASES

Stage 1: United States' Primary One-to-Many Matching Sweeps

Step 3.1.1: For each case in which Combination A is unique in the TEAM database, match Combination A against Combination A in the identifier or disability database. For federal databases, use only the subset of records with Texas addresses in the identifier or disability database. Where a match is attempted but no match is found, indicate a zero in the Combination A output field. Where there is a match, indicate the uniqueness of Combination A in the identifier or disability database in the Combination A output field (*e.g.*, in cases where there is one matching record in the Federal database, <1> should be inserted into the Combination A output field, while a <2> should be inserted into the Combination A output field if the TEAM record matched 2 or more records in the Federal database).

Step 3.1.2: Use the procedure in Step 3.1.1 to match Combination B, Combination C, Combination D, Combination E, and Combination F in the TEAM database against the equivalent combination field in the identifier or disability database.

Step 3.1.3: Use the procedure in Step 3.1.1 to match Combination M in the TEAM database against the equivalent combination field in the identifier databases produced by the State of Texas.

Stage 2: United States' Secondary One-to-Many Matching Sweeps

Step 3.2.1: For each case in which no matches were found in the primary one-to-many matching sweeps (A-F, M), and where Combination G is unique in the TEAM database, match Combination G against Combination G in the identifier or disability database. For federal databases, use only the subset of records with Texas addresses in the identifier or disability database. Where a match is attempted but no match is found, indicate a zero in the Combination G output field. Where there is a match, indicate the uniqueness of Combination G in the identifier or disability database in the Combination G output field (*e.g.*, <1> if a unique match and <2> if matched to more than one record).

Step 3.2.2: For each case in which no matches were found in the primary one-to-many matching sweeps (A-F, M), use the procedure in Step 3.2.1 to match Combination H, Combination I, and complete social security number[6] in the TEAM database against the equivalent combination/field in the identifier or disability database.

Step 3.2.3: For each case in which no matches were found in the primary one-to-many matching sweeps (A-F, M), use the procedure in Step 3.2.1 to match Combination K against Combination G, Combination K, and Combination L in the identifier or disability database.

[6] The full social security number is not created as a separate "combination" as it is its own field stored within the TEAM database under the field name "ssn".

Exhibit A

Step 3.2.4: For each case in which no matches were found in the primary one-to-many matching sweeps (A-F, M), use the procedure in Step 3.2.1 to match Combination L against Combination G, Combination K, and Combination L in the identifier or disability database.

Stage 3: United States' Nationwide Federal Sweeps

Step 3.3.1: For each case in which no matches were found in the primary and secondary matching sweeps of Texas records in a federal identifier or disability database, and where Combination F is unique, match Combination F against Combination F in the nationwide identifier or disability database. Where a match is attempted but no match is found, indicate a zero in the Combination F nationwide output field. Where there is a match, indicate the uniqueness of Combination F in the identifier or disability database in the Combination F nationwide output field (*e.g.*, <1> if a unique match and <2> if matched to more than one record).

Step 3.3.2: For each case in which no matches were found in the primary and secondary matching sweeps of Texas records in a federal identifier or disability database, use the procedure in Step 3.3.1 to match Combination G, Combination I, and full social security number in the TEAM database against the equivalent combination/field in the nationwide identifier or disability database.

Step 3.3.3: For each case in which no matches were found in the primary and secondary matching sweeps of Texas records in a federal identifier or disability database, use the procedure in Step 3.3.1 to match Combination

K against Combination G, Combination K, and Combination L in the nationwide identifier or disability database.

Step 3.3.4: For each case in which no matches were found in the primary and secondary matching sweeps of Texas records in a federal identifier or disability database, use the procedure in Step 3.3.1 to match Combination L against Combination G, Combination K, and Combination L in the nationwide identifier or disability database.[7]

Stage 4: Texas' Many-to-Many Nationwide Sweeps

Step 3.4.1 Regardless of whether the combination for Sweep 1 is unique in the TEAM database, match against the equivalent combination in a nationwide search of the Federal database.

[7] Step 3.3.5 for the State Department only: Match the following Combination G variations from applicable State Department records, first to include only the subset of records with Texas addresses, and then to include all applicable U.S. Passport and Passport Card records nationwide (*e.g.*, without Texas addresses), against the following fields from the TEAM database:

- Combination G1 to DOB + Last fix + First fix + Middle name from the TEAM database;
- Combination G2 to DOB + Last fix + First fix from the TEAM database;
- Combination G2 to DOB + Last fix + First word of First name from the TEAM database;
- Combination G3 to DOB + Last fix + First fix + Middle Initial from the TEAM database;
- Combination G3 to DOB + Last fix + First word of First name + Middle Initial from the TEAM database; and
- Combination G3 to DOB + Last fix + First word of First name + First character of Second word of First fix from the TEAM database.

Attempt matches for all TEAM records, regardless of whether they matched in any prior sweeps. Indicate <1> if a unique match and <2> if matched to more than one record.

Step 3.4.2 Regardless of whether full 9 social security number is unique in the TEAM database, for Sweep 2, match against the equivalent field in a nationwide search of the Federal database.

Step 3.4.3 Regardless of whether the combination for Sweep 3 is unique in the TEAM database, match against the equivalent combination in a nationwide search of the Federal database.

Step 3.4.4 Regardless of whether the combination for Sweep 4 (Combination G) is unique in the TEAM database, match against the equivalent combination in a nationwide search of the Federal database.

Note: For each of the Texas many-to-many sweeps:

- Indicate <1> if any TEAM combination matches a single combination in the Federal database
- Indicate <2> if any TEAM combination matches more than one record in the Federal database.
- Indicate <0> if no match is achieved.

Examples:

- If there are two TEAM records that have identical versions of the combination for Sweep 1, and there is one record in the Federal database that matches on this combination, both of the underlying TEAM records will have a matching output of <1> for Sweep 1.

- If there are three TEAM records that have identical versions of the combination for Sweep 3, and there are five records in the Federal database that match on that combination, the three TEAM records will each have a matching output of <2> for Sweep 3.

Exhibit B

Step 1.3 Diagnostics on the VHA Data

There were 5,020,207 records extracted from the VHA data for Veterans with a Veteran Identification Card (VIC) on 2/28/2014. The number of Veterans with a VIC and a Texas residential address was 389,383.

Name

	Number of Records	Percent of Records
Last Name Missing	0	0.00%
First Name Missing	31	0.00%
First Name Only One Character	11,881	0.24%
Middle Initial Missing	661,201	13.17%

Social Security Number

	Number of Records	Percent of Records
SSN Missing	2,481	0.05%
Invalid SSN (begins with '00000')	27	0.00%

Gender

Gender was 100% populated.

Date of Birth

The possibly invalid dates of birth below appear to be default values used in the date of birth (e.g., first day of month, 15th of month, first day of year). This is rare.

	Number of Records	Percent of Records
Incomplete date or outside 1901-1996	77	0.00%
Possibly invalid (01-01-01, etc.)	21	0.00%

Zip Code

	Number of Records	Percent of Records
Zip missing (Most of these were cases with a missing residential address)	132,103	2.63%

Exhibit B

Mailing Zip

There were 5,301 veterans with a mailing address.

	Number of Records	Percent of Records
Mailing Zip missing	20	0.38%

Exhibit I

IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF COLUMBIA

STATE OF SOUTH CAROLINA *Plaintiff*, v. THE UNITED STATES OF AMERICA and ERIC H. HOLDER, JR. in his official capacity as Attorney General of the United States, *Defendants*, and JAMES DUBOIS, *et al.*, *Defendant-Intervenors.*	CIVIL ACTION NO: 1:12-CV-203-CKK-BMK-JDB (Three Judge Court)

Rebuttal Declaration of Charles Stewart III, PhD.

Pursuant to 28 U.S.C. § 1746, I, Charles Stewart III, make the following declaration:

1. My name is Charles Stewart III. I am the Kenin Sahin Distinguished Professor of Political Science at MIT and the co-director of the Caltech/MIT Voting Technology Project. On June 26, 2012, I submitted an expert report on behalf of the United States of America in this case. That report analyzed racial disparities in the possession of driver's licenses and identification cards issued by the South Carolina Department of Motor Vehicles (SCDMV).

2. I have been asked by the U.S. Department of Justice to review the expert report offered by Professor M.V. "Trey" Hood and to provide analysis of the substance of his findings. In this Rebuttal Declaration, I discuss my disagreements with the conclusions reached by Professor Hood.

3. The Declaration of Professor Hood provides an inaccurate estimate of the racial disparities regarding the possession of the requisite photographic identification under Act R54. Professor Hood's estimates are inaccurate because they do not take into account the fact that a significant number of registered voters have returned their licenses to the South Carolina Department of Motor Vehicles (SCDMV). Some of these voters have had their licenses returned to the SCDMV from jurisdictions outside of South Carolina, which suggests that they have moved out-of-state, and therefore are no longer eligible voters. Other voters who have returned their licenses are still residents of the state, but the fact that the SCDMV has received the licenses back suggests these registered voters do not have those licenses in their possession to use as identification when they vote. As I show below, once we account for these voters — either separately or in a combined analysis — the racial disparities in South Carolina between those who possess the requisite identification and those who do not is much greater than is indicated in Professor Hood's report.

4. The Declaration of Professor Hood also inaccurately characterizes the size and statistical significance of the racial disparities he discovers regarding the possession of the requisite photographic identification under Act R54. He reports differences in the probabilities that white and African American registered voters will possess either a driver's license or an ID card issued by the SCDMV, implying that these differences are so small as to be ignorable. However, based on statistical tests that are commonly used in the social sciences, the differences

he reports are statistically significant, and are very unlikely to have occurred due to random chance.

5. Furthermore, since the time I filed my original report, I have been provided the results of an effort to match a list of South Carolina voters Professor Hood identified as not possessing the requisite photographic identification with the military ID and passport datasets that are maintained by the U.S. Department of Defense and Department of State. The results of this matching demonstrate that even within the scope of Professor Hood's analysis, there are significant racial disparities between those who do and do not possess the requisite identification.

6. In addition, I have more recently been provided the results of an effort to match the list of voters I identified as not possessing a driver's license or SCDMV-issued ID card with the military ID and passport datasets that are maintained by the Defense and State Departments. The results of this matching demonstrate that the racial disparities between white and African American active registrants that I described in my original declaration are even greater than I had originally estimated.

7. Finally, in examining the analysis Professor Hood has offered concerning academic research into the effects of the implementation of a new photo voter ID law in Georgia during the 2008 general election, I conclude that the analysis he offers does not provide relevant information to ascertain whether the implementation of the Georgia law widened or lessened the turnout gap between white and African American registered voters who did and did not possess a driver's license. Furthermore, the parallels he draws between the Georgia law and the legislation passed in South Carolina are irrelevant, insofar as the South Carolina law is significantly more restrictive than the law passed and implemented in Georgia.

Response to Professor Hood's Analysis

Replicating Professor Hood's database matching analysis

8. The analysis of racial disparities regarding the possession of acceptable photo IDs under Act R54 is incomplete, because it does not deal appropriately with registered voters who have had their driver's licenses returned by an out-of-state jurisdiction, does not take into account the presence of deceased individuals in the voter driver's license database and voter list, and does not take into account the fact that some voters have had to surrender their licenses to the state due to suspensions. In order to demonstrate the degree to which these features of his analysis underestimate further the racial disparities in South Carolina between those who do and do not possess a driver's license or SCDMV-issued ID card, I, first, replicated Professor Hood's analysis concerning racial disparities in the possession of driver's licenses and identification cards, based on the description of the research protocol in his expert report. Second, I then modified his analysis to reflect a set of choices I consider to be more appropriate for the purpose of estimating racial disparities in the possession of driver's licenses and SCDMV-issued identification cards in South Carolina.

9. When I follow the description of Professor Hood's procedure, I produce a list of registrants who are matched with the driver's license database that essentially agrees with the number of cases reported by Professor Hood in his Tables 1 and 3.[1] The greatest variances between the results I obtained and those described by Professor Hood involve the matching algorithm that uses the name and date-of-birth to merge records from the voter registration list with the driver's license database.

[1] Declaration of M.V. Hood III, South Carolina v. United States (Case No. 1:12-CV-203-CKK-BMK-JDB), June 19, 2012, at 9, 12 (hereinafter "Hood Declaration").

10. I account for the differences between the results I obtained and those reported by Professor Hood to four factors: (1) our use of different software programs to perform our analyses, (2) different procedures for handling duplicate records, (3) the preparation of names for the name/date-of-birth match, and (4) ambiguities in Professor Hood's description of how he combined results from the match he performed using Social Security numbers and the match he performed using name/date-of-birth.

11. Full details concerning my replication of Professor Hood's procedures, and a fuller discussion of the factors that likely produced a slight divergence of results, are contained in Attachment A. Based on a comparison of the racial distributions of the replicated no-match lists with those reported in Professor Hood's report, along with a comparison of the individuals on the replicated no-match list with the one prepared by Professor Hood himself and made available to me (paragraphs 51 to 59 *infra*), I am confident that the results I produce are essentially the same as those that Professor Hood *would have produced*, had he conducted the analysis using these more appropriate choices.

Accounting for differences between my analysis and that of Professor Hood

12. Based on my examination of the description of Professor Hood's matching algorithm, it is evident that he and I differed in four major ways in how we conducted our analysis.

13. First, I excluded from my analysis registered voters *and* license holders who are coded in the SCDMV database as having a driver's license returned to the SCDMV from a jurisdiction outside the state of South Carolina. It is reasonable to assume that these individuals had their licenses returned to South Carolina from out-of-state because they have left the state

and therefore are no longer eligible voters in the state. Below, I provide evidence to corroborate this assumption. (See paragraph 30 *infra*.)

14. I became aware that I should take into account voters who had returned their licenses from out-of-state from an undated letter, presumably written in late 2011, from Mr. Kevin Shwedo (Executive Director, South Carolina Department of Motor Vehicles) to Mr. Jay W. Smith (Director of Consumer Protection and Antitrust, S.C. Attorney General's Office), which addressed an effort to match the state voter list with the state's driver's license database.[2] In that letter, Mr. Shwedo gave an accounting of his office's analysis of 293,333 unmatched records between the voter list and the driver's license list. Of these 293,333 records, "96,017 records had a matching record in the Department of Motor Vehicles' master database; however, the record was no longer listed as in the Department of Motor Vehicles' database of valid photo IDs because the ID had been canceled. 91,466 of those 96,017 records had been canceled by the Department of Motor Vehicles in response to a notification from another state's department of motor vehicles that the individual had registered for a driver's license in that state."

15. The implication of this quoted passage is clear — the executive director of the SCDMV assumed that anyone whose license was returned from out-of-state was most likely no longer a resident of the state, and therefore should not be included in the count of registered voters who lacked a driver's license or SCDMV-issued ID card.

16. As I note in footnote 26 of my original declaration, it is possible that some of the licenses were returned from out-of-state despite the fact that the individual could still have

[2] Letter from Kevin Shwedo, Executive Director, South Carolina Department of Motor Vehicles, to Jay W. Smith, Director of Consumer Protection and Antitrust, South Carolina Attorney General's Office (Dec. 2011) (produced by the State of South Carolina, at SC_00059801-00059802).

claimed South Carolina residency for the purpose of voting.[3] However, as I demonstrate below, the behavior of these registered voters is such that it is clear that the great majority of them have, in fact, ceased to be South Carolina voters.

17. Therefore, I concluded that in order to accurately estimate the composition of the registered electorate in South Carolina without a requisite photographic voter ID card, one should completely remove from the analysis any individual whose driver's license or identification card has been returned from out-of-state.

18. Second, I removed licenses that the state reported had been returned to the SCDMV. In my examination of the SCDMV database, I discovered that there was a more general set of reasons why drivers might have returned their licenses to the state, and that licenses returned for these reasons are indicated in the table labeled license_receive. According to the description provided by a document produced by the State of South Carolina, the license_receive table "holds all the information about the DL received by SCDMV. This table can hold both license turned in by a driver and special licenses that are automatically revoked when a suspension, violation, adsap [Alcohol and Drug Safety Action Program] incompletion, or SR-26 are put on the license."[4] In another document prepared by the SCDMV, this table is described as "Existing Phoenix Database table used to track when a license is surrendered. Customer could surrender in SC or another jurisdiction may return the license to SC when the customer moves out of state and re-licensed in that jurisdiction."[5]

[3] *See* Declaration of Charles Stewart III, PhD, South Carolina v. United States (Case No. 1:12-CV-203-CKK-BMK-JDB), June 26, 2012, at 33, n. 26 (hereinafter "Stewart Declaration").
[4] This document was headed "Tables and Columns." The file name was "SCDMV - Database Tables and Columns.pdf," with a creation date of May 9, 2012 at 5:57 p.m.
[5] This document was headed "South Carolina Department of Motor Vehicles Data – Proposed Production," with a creation date of April 18, 2012 at 10:32 a.m.

19. It is this table which is the source of information about licenses returned from out-of-state, discussed above (paragraphs 13 to 18). The license_receive table also notes, for instance, when a license has been suspended. Unlike most other tables in the SCDMV database, I identified licenses in this table through a combination of *four* data fields, rather than a single field: license number, license type, license function, and issue date. In Attachment B, I report the distribution of reasons for the return of licenses among all non-expired licenses in the driver's license database.

20. It is reasonable to assume that the great majority of individuals reflected in this table do not currently possess a driver's license, and therefore could not produce it in order to vote. Therefore, I chose to remove these licenses (identified by the unique combination of license number, license, type, license function, and issue date) from the set of valid licenses I used to create my master driver's license list.

21. The third way in which our analyses differed is that I removed deceased voters and license-holders from the analysis. The letter from Kevin Shwedo, executive director of the SCDMV, also mentioned the issue of deceased individuals who appeared on the voter list, but who may have already had their license recorded as invalid because of the death.[6] Furthermore, the fact that there may be dead people on the voters list raises the possibility that there are dead people on the driver's license list. As a consequence, when I prepared my voters and driver's license list, I removed individuals from each list when they appeared on the list of death certificates issued in the state.[7]

22. Fourth, Professor Hood and I dealt with unusable Social Security numbers in different ways. Specifically, Professor Hood did not deal with unusable Social Security numbers

[6] *See supra* ¶14.
[7] Stewart Declaration, at 23-24, ¶¶66–71.

explicitly at all, whereas I explicitly removed cases in which Social Security numbers violated conventions for assigning numbers, or represented likely placeholders, such as "333-33-3333." Rather, Professor Hood simply removed duplicate Social Security numbers, which would remove records with unusable numbers that were common, such as 123-45-6789. However, unique numbers that violated Social Security number conventions would remain.

23. I discussed the issue of verifying Social Security numbers in paragraphs 72 to 85 of my original declaration.[8] In Attachment K of that declaration, I reported that there were 210,910 unusable Social Security numbers in the driver's license database, 6,248 in the voter file (active voters only), and 5,563 in the death certificate file. I also reported that there were an additional 13,240 duplicates in the driver's license database, 2,395 in the voter file (active voters only), and 1,239 in the death certificate file.

24. Finally, Professor Hood and I deal with the details of merging in different ways. For instance, when I conduct the Social Security number match, I used a combination of Social Security number and gender, whereas Professor Hood matched solely on Social Security number.[9]

25. The important question to understand is which of the differences in details between how we prepared the databases for analysis produce the significant disagreement in the overall conclusions we draw about racial disparities in lacking a driver's license or SCDMV-issued photo ID. In my detailed review of Professor Hood's algorithm, I conclude that our differences are principally because of the points discussed in paragraphs 13 to 24 above — how we handle licenses that have been returned to the SCDMV.

[8] *Id*. at 24–28, ¶¶72–85
[9] *Id.*

26. I reached this conclusion by modifying *my own* matching program so that it reflected, as much as possible, the data preparation protocols used by Professor Hood, with the exception of the two significant differences just mentioned — removing voters with an out-of-state removed license and removing licenses that had been returned to the SCDMV. After re-running my analysis with these changes made, the conclusions I reached in my original declaration remain unchanged.

27. These are the changes to my own protocol that I implemented so that my data preparation matched that of Professor Hood: (1) rather than conducting merges involving Social Security numbers using the "SSN+sex" rule identified in my initial declaration, I conducted these merges using the Social Security number alone;[10] (2) rather than dealing with unusable Social Security numbers explicitly, I dealt with them through the removal of duplicate Social Security numbers;[11] (3) I did not conduct the match with driver's license addresses, discarding the small number of cases without a matching address; (4) I removed licenses marked as "invalid" in the license_status field; and (5) I did not remove licensees or voters who were identified as being deceased.

28. I report the full results of this estimation in Attachment C, which is parallel to the presentation in Attachment Q of my original report. Table 2, below, summarizes the most important finding from that analysis, which is the estimate of the probability that active registrants do not possess the requisite identification, broken down by racial group.

[10] *Id.*, at 28–29, ¶85.
[11] Missing Social Security numbers and unusable Social Security numbers that follow common repetitive patterns (00000000, 999999999, etc.) can, to a large degree, be removed through the removal of duplicates. Of course, Social Security numbers that violate the number protocol, but that do not follow a repetitive pattern, will not be removed this way.

Table 2. Probability of being unmatched with the DMV database, by race

	From original Stewart report (Attachment Q.b)		Based on preparing datasets according to Prof. Hood's protocol	
Race	Pct.	N[a]	Pct.	N[b]
Asian	6.2%	16,888	5.7%	16,883
Black/ African American	9.5%	731,772	9.5%	734,754
Hispanic	10.0%	25,956	9.9%	25,957
Mixed	14.4%	160	13.3%	158
Native American	10.1%	4,949	10.1%	4,949
Other	12.9%	12,949	12.2%	12,954
Unknown	31.5%	89	27.0%	89
White	5.5%	1,774,926	5.4%	1,776,684
Total	6.7%	2,567,689	6.7%	2,572,428

[a]Total number of matches and non-matches from sub-table b of Attachment Q in my original report.
[b]Total number of matches and non-matches from sub-table b of Attachment C of this report.

29. As the results from Table 2 illustrate, had I prepared the data files using the same procedures as Professor Hood, I would have included 4,739 more cases in the overall analysis. However, my overall substantive conclusion would not have changed. African Americans and Hispanics are still significantly more likely not to possess a driver's license or photo ID than white voters. Thus, the basis of our differing conclusions about racial disparities in the possession of driver's licenses and photo ID cards is not due to these data-preparation differences.

The behavior of voters with licenses returned from out-of-state

30. I now turn my attention to the behavior of voters with licenses returned from out-of-state.[12] The first issue to address is whether the behavior of such voters indicates they have already withdrawn from electoral participation in South Carolina. To answer this question, I produced a list of everyone in the SCDMV database with a license that had been returned from

[12] In my original declaration, I report that African Americans are significantly more likely to be among voters with a returned license *in general*, compared to white voters. Stewart Declaration, at 40, ¶116.

an out-of-state jurisdiction, merged that list with the customer_individual table (using the license_header table to link license numbers and customer numbers), which gave me the Social Security number of individuals with out-of-state returned licenses. I also produced a list of everyone on the current South Carolina voter list who had voted in either the 2008 or 2010 general election.[13] Using Social Security numbers, I merged the list of individuals with licenses returned from out-of-state with the list of voters in the 2008 and 2010 general elections.[14] I report the results of this merging below in Table 3.

Table 3. Election participation of registrants with out-of-state returned licenses.

	2008 general election			2010 general election		
	All registered voters	Active registrants	Inactive registrants	All registered voters	Active registrants	Inactive registrants
License not returned from out-of-state	66.1% (2,700,521)	68.1% (2,560,519)	30.2% (140,002)	48.8% (2,700,521)	50.8% (2,560,519)	12.5% (140,002)
License returned from out-of-state	37.0% (170,908)	38.5% (155,047)	22.4% (15,861)	18.0% (170,908)	18.9% (155,047)	9.0% (15,861)
All registrants	64.4% (2,871,429)	66.4% (2,715,566)	29.4% (155,863)	47.0% (2,871,429)	49.0% (2,715,566)	12.1% (155,863)

31. Table 3 may be read as follows. Starting with the last row of the table, there are 2,871,429 total voters involved in the analysis — 2,715,566 active registrants and 155,863 inactive registrants. Of these, 64.4% voted in the 2008 general election — 66.4% among the active registrants and 29.4% among the inactive registrants. Similarly, 47.0% of all current registrants voted in the 2010 general election — 49.0% among the active registrants and 12.1% among the inactive registrants. The rows that are above the last row break down these vote-rate

[13] Following Professor Hood's practice, I removed duplicate Social Security numbers before undertaking these merges.

[14] I created this list of participants in the 2008 and 2010 general elections by starting with voters identified in the voter participation list I had been given as having voted in either of those elections and merging that list with the voter list (using the "personid" index as the matching variable), in order to associate a Social Security number and status (active/inactive) with the voter.

statistics according to whether the voter was associated with a license that had been returned from an out-of-state jurisdictions.

32. Among all voters in the 2008 general election who have had their license returned from out-of-state, only 37.0% voted in that election — 38.5% of active registrants and 22.4% of inactive registrants. In contrast, among all voters who have *not* had their license returned from out-of-state, 66.1% voted in that election — 68.1% of active registrants and 30.2% of inactive registrants.

33. Among all voters in the 2010 general election who have had their license returned from out-of-state, only 18.0% voted in that election — 18.9% of active registrants and 9.0% of inactive registrants. In contrast, among all voters who have *not* had their license returned from out-of-state, 48.8% voted in that election — 50.8% of active registrants and 12.5% of inactive registrants.

34. I will call the difference in voter turnout rates between two groups the "drop-off" from the higher group to the lower group. For the 2008 general election, the drop-off from the active voters *without* a license returned from out-of-state to active voters *with* a license returned from out-of-state is 29.6 percentage points (68.1% - 38.5%); for the more recent 2010 general election, that drop-off is 31.9 percentage points (50.8% - 18.9%). It is notable that these drop-off rates are comparable in size to the contrast between voting rates of *active* registrants with voting rates by *inactive registrants.* The drop-off in 2008 from *active* to *inactive* registrants without a license returned from out-of-state is 37.9 percentage points (68.1% - 30.2%); for 2010, the comparable drop-off amounts to 38.3 percentage points (50.8% - 12.5%).

35. We can examine these patterns with more specificity by making note of the date when the license was returned to South Carolina from out of state. For every registrant with a

returned license, I noted the date on which the license was received by the SCDMV.[15] I then extended the analysis in Table 3 by distinguishing between registrants whose license had been returned *before* the general election date in question, and those whose license had been returned *after* the general election date in question. Table 4, below, reports the results of that analysis.

Table 4. Election participation of registrants with out-of-state returned licenses, distinguishing between those with licenses returned before the election date and those with the license returned after the election date.

	2008 general election			2010 general election		
	All registered voters	Active registrants	Inactive registrants	All registered voters	Active registrants	Inactive registrants
License not returned from out-of-state	66.1% (2,700,521)	68.1% (2,560,519)	30.2% (140,002)	48.8% (2,700,521)	50.8% (2,560,519)	12.5% (140,002)
License returned from out-of-state after the election	53.6% (65,686)	54.0% (59,934)	49.3% (5,752)	25.5% (31,160)	25.0% (27,574)	28.7% (3,586)
License returned from out-of-state before the election	26.6% (105,222)	28.6% (95,150)	7.0% (10,072)	16.3% (139,748)	17.6% (127,510)	3.1% (12,238)
All registrants	64.4% (2,871,429)	66.4% (2,715,566)	29.4% (155,863)	47.0% (2,871,429)	49.0% (2,715,566)	12.1% (155,863)

36. Table 4 may be read as follows. The first row of numbers reports voting rates among voters who had no license returned from out-of-state, for both the 2008 and 2010 elections. These numbers are identical to those reported in the first row of Table 3. The second row of numbers reports the voting rates of registrants who had their driver's license returned from out-of-state *after* the election in question. The turnout rates of these voters are generally below that of voters who never had a license returned from out-of-state — the notable exception

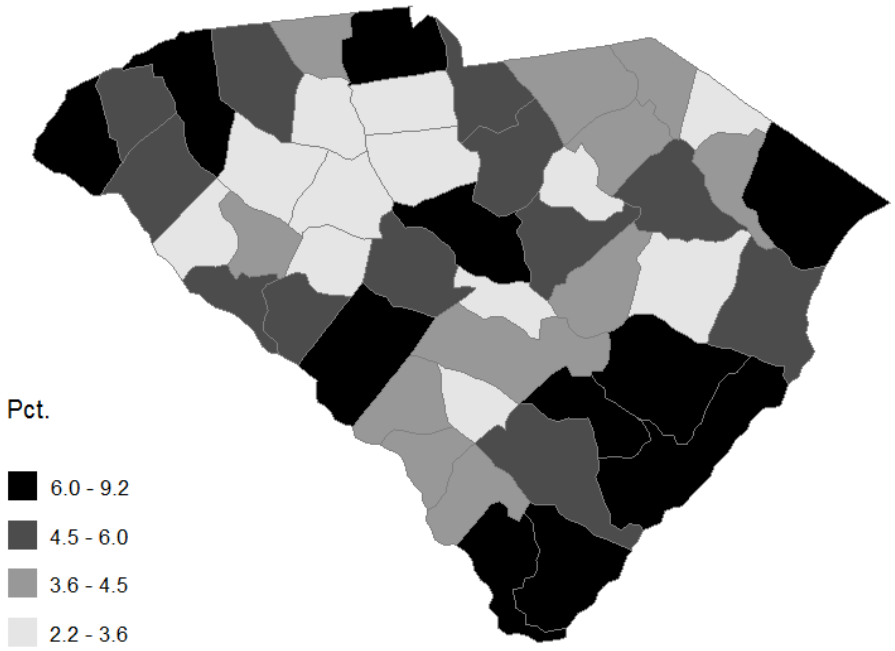
[15] In 2.7% of cases, a driver's license holder had a license returned from out-of-state more than once. In these cases, I used the last license's return date in conducting this analysis.

concerns inactive-status voters in 2008 — which is an indication that at least some of these voters had already severed political connections to the state. The third row of numbers reports the voting rates of registrants who had their driver's license returned from out-of-state *before* the election in question, and are the most likely to have actually left the state altogether. These registrants turned out at the lowest rates of all voters described in this table.

37. Therefore, it is important to note that even *active* registrants who have had a license returned from out-of-state have voted in South Carolina at rates that approximate inactive voters. The fact that active registrants with licenses returned from out-of-state show similar patterns of voter participation to inactive registrants suggest that the vast majority of registrants with out-of-state returned licenses have removed themselves from electoral politics in South Carolina.

38. The recorded South Carolina residence of voters whose license has been returned from out-of-state is not randomly distributed across the state. This is demonstrated in Figure 1, below. (The data mapped in Figure 1 is reported in tabular form in Attachment D.) In that map, counties have been shaded to reflect the percentage of active voters with a license that had been returned from out-of-state. (Each shading category reflects one-quarter of the counties.) The counties with the darkest shading are those with the highest percentage of voters with licenses returned from out-of-state.

Figure 1. Geographic location of out-of-state returned licensees.



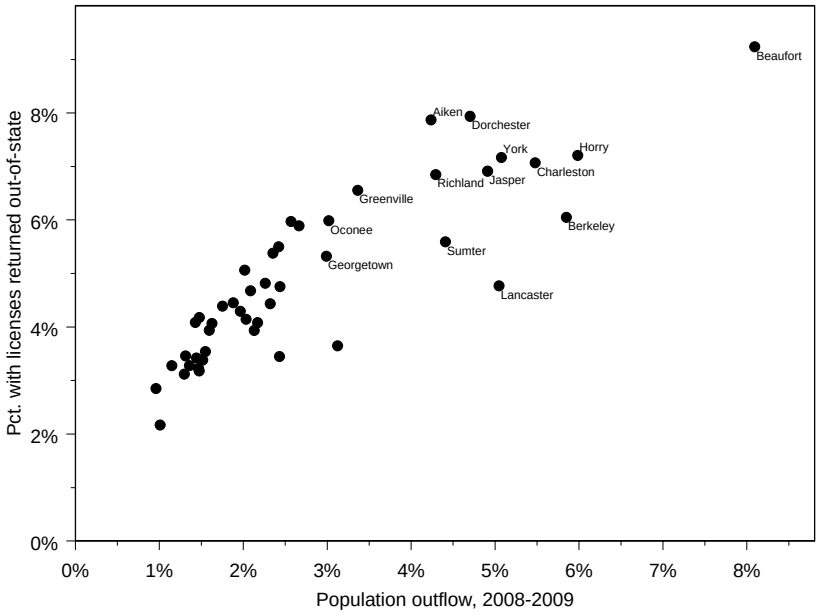
39. The darkest shadings are located in three bands across the state. Particularly notable is that one of those bands consists of the counties along the Atlantic coast — communities such as Myrtle Beach (Horry County), Georgetown (Georgetown County), Bluffton (Beaufort County), Hilton Head Island (Beaufort County), Beaufort (Beaufort County), and Charleston (Charleston County) that are well-known retirement and vacation communities. Another one of the concentrations of dark-shaded counties is in the northwest corner of the state, which is also notable for the number of retirees and second homes.[16]

40. The association of the location of voters with licenses returned from out-of-state with high levels of interstate mobility is demonstrated more generally by the scatterplot in Figure 2. (A larger version of Figure 2 is provided in Attachment E.) Plotted along the *y*-axis is the

[16] Robert Powell, *The Top 10 Places to Retire*, Marketwatch (Feb. 25, 2010), http://www.marketwatch.com/story/the-top-10-places-to-retire-2010-02-25. Powell cites information from the web site TopRetirements.com as the primary source for his article.

same out-of-state license return rate mapped in Figure 1. The *x*-axis is an estimate of the percentage of households who moved *out* of South Carolina counties between 2008 and 2009 provided by the U.S. Internal Revenue Service.[17] (The years 2008 and 2009 are the most recent years that these data are available.) Note that the levels of population out-migration in South Carolina counties are strongly correlated with the percentage of voters who have had a license returned from an out-of-state jurisdiction.[18]

Figure 2. Scatterplot of out-of-state license return rates against population outflow rates



41. Finally, it is important to note that registered voters with licenses returned from out-of-state jurisdictions are much more likely to be white than voters without such licenses. This is illustrated in Table 5, below, which reports the probability of having a license returned from out-of-state, broken down by race and ethnicity. White voters are significantly more likely

[17] The IRS data may be downloaded at the following web site: http://www.irs.gov/taxstats/article/0,,id=214161,00.html.
[18] The Pearson correlation coefficient (*r*) associated with this scatterplot is .87. The amount of variation in the license return rate explained by the population outflow rate (r^2) is therefore 93%.

to have a license returned from out-of-state than African American voters. The difference, in terms of percentage *points* is 2.8 for all registrants, 2.6 for active registrants, and 6.0 for inactive registrants. In terms of the differences in *rates*, white registrants are 1.7 (=6.7/3.9) times more likely to have a license returned from an out-of-state jurisdiction overall, compared to African Americans. Among active registrants, this ratio is 1.7:1 (6.4/3.8); among inactive registrants, this ratio is 2.0:1 (12.1/6.1).

Table 5. Racial distribution of registrants with out-of-state returned licenses.

	All voters	Active voters	Inactive voters
Black/African American	3.9% (812,534)	3.8% (760,548)	6.1% (51,986)
White	6.7% (1,989,740)	6.4% (1,889,286)	12.1% (100,454)
Total	6.0% (2,871,428)	5.7% (2,715,656)	10.2% (155,772)

Note: Numbers in parentheses are the total number of individuals used to calculate the reported percentages. The numbers in parentheses along the "Total" row reflect all voters, and not just African American and white voters.

χ^2 test statistics against the null hypothesis that the distribution of returned licenses is equal across all racial groups: All voters, 8,400; active voters, 7,400; inactive voters, 1,500. All tests done with 7 degrees of freedom, reflecting data that includes all racial groups. The *p*-value in all cases is less than 0.05%.

42. The fact that registered voters with licenses returned from out-of-state live in counties with high levels of out-migration and vote at significantly lower levels than South Carolinians overall confirms the presumption of Executive Director Kevin Shwedo, quoted in paragraph 14 above, that these registered voters should be removed from analysis that matches the driver's license list with the voter list altogether. The fact that these individuals are much more likely to be white than the voter list overall explains why failing to exclude them from the analysis would minimize racial disparities in the possession of driver's licenses and photo IDs among South Carolina's registered and eligible voters.

The effect of accounting for returned licenses in the estimation of racial disparities

43. Thus, analysis concerning whether there are racial disparities in the possession of driver's licenses and photo IDs will be significantly affected by how one deals with returned licenses. I demonstrate this claim by returning to Professor Hood's algorithm, now altering it in three ways. First, I run his algorithm, removing *only* voters with licenses that have been returned from out-of-state. Second, I run his algorithm, removing *only* licenses that have been returned to the state. Third, I run his algorithm, removing both the voters with licenses that have been returned from out-of-state *and* all licenses that have been returned to the state.

44. I compare these three simulations with two benchmarks. The first benchmark is the percentage of African American and white active registrants without a license or SCDMV-issued ID card I estimate when I conduct the replication of Professor Hood's method that I discuss in Attachment A. The second baseline is the results I reported in my original declaration, in Table 4 and Attachment Q.

45. The results of these comparisons are reported in Table 6, below.

Table 6. The effect of removing returned licenses and license holders with out-of-state returned licenses from the estimates using Professor Hood's method, active registrants.

	Stewart replication of Professor Hood's method				
	Baseline replication	Removing out-of-state licensees only	Removing all returned licenses only	Removing both sets of licensees and license holders	Stewart analysis of active registrants from original declaration
African Amer.	7.5% (763,951)	6.7% (734,640)	12.5% (763,695)	10.7% (734,642)	9.5% (731,772)
White	7.3% (1,898,728)	4.1% (1,776,358)	9.4% (1,898,160)	5.7% (1,776,385)	5.5% (1,774,926)
All	7.3% (2,728,809)	4.9% (2,572,009)	10.4% (2,727,965)	7.2% (2,572,034)	6.7% (2,567,689)
Diff. between Black and white voters (percentage points)	0.2	2.6	3.1	5.0	4.0

46. Table 6 may be read as follows. The first column repeats the no-match rates for African American, white, and all active registered voters that I reported above in Table 1, when I implemented Professor Hood's algorithm with the active voter list. In that analysis, 7.5% of African American registrants, 7.3% of white registrants, and 7.3% all registrants did not have a match with the driver's license list. The difference between African American and white active registrants was 0.2 percentage points. The second column reports the results I obtain after repeating the analysis reflected in the first column, only now removing all registrants from the voter list if they have a license returned from out-of-state. In this analysis, 6.7% of African American registrants, 4.1% of white registrants, and 4.9% of all active registrants did not have a match with the driver's license list. The difference between African American and white active registrants is now 2.6 percentage points.

47. The third column reports the results after repeating the analysis reflected in the first column, this time removing licenses from the driver's license list that have been returned to the SCDMV. In this analysis, 12.5% of African American registrants, 9.4% of white registrants, and 10.4% of all registrants did not have a match with the driver's license list. The difference between African American and white active registrants is 3.1 percentage points. The fourth column reports the results when I combine the analysis reflected in columns two and three. Here, 10.7% of African American registrants, 5.7% of white registrants, and 7.2% of all registrants did not have a match with the driver's license list. The difference between African American and white registrants is 5.0 percentage points in this analysis.

48. The final column repeats the results I reported in Table 4 and Attachment Q of my original declaration. In that analysis, 9.5% of African American active registrants, 5.5% of white active registrants, and 6.7% of all registrants did not have a match with the driver's license list. The difference between African American and white registrants was 4.0 percentage points in that analysis.

49. The racial disparity in whether an active voter lacks the requisite identification card jumps by 2.2 percentage points (from 0.2% to 2.6%) by removing voters with licenses returned from out-of-state, by 2.9 percentage points (from 0.2% to 3.1%) by removing licenses returned for any reason, and by 4.8 percentage points (from 0.2% to 5.0%) by combining the two. Furthermore, note that the estimates of the racial disparity under any of these scenarios is closer to my own original estimate, which differed in how it prepared the datasets for the matching exercises, than to Professor Hood's.

50. Therefore, I conclude that Professor Hood's failure to find racial differences of the magnitude I found in the lack of the requisite photographic identification cards was due to his

failure to exclude voters whose licenses had been returned from out-of-state *or* licenses that had been returned for any reasons. Adding *only one* of these two features to Professor Hood's analysis would have provided additional evidence of significant racial disparities concerning the lack of the requisite photographic identification.

The Inclusion of Information Concerning Passports and Military Identification

51. After I had filed my original declaration, Department of Justice staff sent me two spreadsheets that were the results of efforts by the U.S. Departments of State and Defense to merge Professor Hood's no-match lists against databases maintained by those federal agencies that accounted for passport holders and military ID holders, respectively.[19]

Using the no-match data from DOD and DOS to further confirm the fidelity of my replication of Professor Hood's matching method

52. The returned spreadsheets contain information about the degree to which Professor Hood's no-match list overlapped with the military identification and passport lists. It is possible to use these returned spreadsheets, in turn, to examine the racial distribution of individuals matched to these lists and, furthermore, to modify Professor Hood's original analysis to take account of this new information.

53. In addition, it is possible to use these spreadsheets to further validate the degree to which I was able to reproduce the results of Professor Hood's matching algorithm, as he described it in his declaration. I can do this by merging together the spreadsheet returned by the

[19] Although the no-match list was not identified specifically with Professor Hood, only with the State of South Carolina, the length of the list matches precisely the number of no-matches in Table 3 of his report. Professor Hood confirms in his Supplemental Declaration that the data sent for matching were produced from his analysis. Supplemental Declaration of M.V. Hood III, South Carolina v. United States (Case No. 1:12-CV-203-CKK-BMK-JDB), July 28, 2012, at 2 (hereinafter "Hood Supplemental Declaration").

Department of Defense, which included the voter registration number of each individual, with no-match list I had produced using Professor Hood's description of how he matched his larger voter list, consisting of active and inactive registrants, with the SCDMV database using a combination of Social Security number and name/date-of-birth merging rules.

54. Table 7, below, reports the results of this comparison. Recall, from Table 3 of Professor Hood's declaration, that he had produced a no-match list in his larger analysis of 222,370 registered voters.[20] These are the cases in the spreadsheets I received from the federal agencies. As reported in Table 7, I captured 219,684 of these cases in the no-match list when I replicated Professor Hood's description. (The no-match list I produced in the replication had a total of 220,643 cases.) Of the cases in the spreadsheet I received, 2,679 were unique to Professor Hood, that is, they were not in my replicated no-match list. Furthermore, 959 of these cases were unique to my own efforts, that is, they were on the replicated list, but not on the one produced by Professor Hood. Overall, 98.8% of Professor Hood's list overlapped with the list from my replication efforts; 99.6% of the replicated list overlapped with his. When we consider all the cases that ended up on one no-match list or the other, 98.4% of all cases were common to both lists, 1.2% were unique to Professor Hood's list, and 0.4% were unique to the replicated list. I consider this to be further evidence that I was able to reproduce Professor Hood's procedure accurately, using the description provided in his report.

Table 7. Comparison of no-match lists, using Professor Hood's name+dob matching method.

	Number of cases	As pct. of Hood list	As pct. of Stewart replication	As pct. of combined list
Common to both lists	219,684	98.8%	99.6%	98.4%
Unique to Hood list	2,679	1.2%	—	1.2%
Unique to Stewart list	959	—	0.4%	0.4%

Note: The size of the no-match list provided to the federal agencies by Professor Hood was 222,370 cases. The number of cases identified in my replication of Professor Hood's method was 220,643.The number of cases in *either* list, including duplicate and unique cases, was 223,322.The comparison was done on the spreadsheet returned from the Department of Defense.

[20] Hood Declaration, at 12.

Using the no-match data from DOD and DOS to demonstrate racial disparities using Professor Hood's analysis

55. The primary utility of the spreadsheets received back from the two federal agencies is that I can analyze the degree to which the provisions of Section 5 of Act R54 that allow military identification and passports to be used as acceptable forms of identification at the polls creates a discernible racial disparity within the logic of Professor Hood's analysis.

56. The Excel spreadsheet I received from the *Department of Defense (DOD)* contained two worksheets. One consisted of the 220,013 cases in which it was possible to attempt a match between the DOD list and Professor Hood's list of registrants (active and inactive) without a driver's license or SCDMV-issued ID, of whom 12,032 possessed a military ID. The spreadsheet contained a data column that indicated whether the registrant possessed a military ID. The other worksheet consisted of the 2,357 cases in which it was not possible to attempt a match. This latter worksheet contained records of two sorts: first, records with unusable Social Security numbers and, second, records that were lacking Social Security numbers.

57. Each worksheet in this spreadsheet contained the voter registration number of the registered voters on Professor Hood's no-match list, along with the Social Security number. Using the voter registration number, it was possible to merge the cases reflected in this spreadsheet with the South Carolina voter list, to ascertain the racial characteristics of those with, and without, military IDs. Using the Social Security number, it was possible to merge the cases in this spreadsheet with the passport file, described below.

58. The Excel spreadsheet I received from the *Department of State (DOS)* contained two worksheets. One worksheet consisted of 67,175 cases in which it was ascertained that the registrant possessed a valid passport. The other worksheet consisted of 155,195 cases in which

there was no match, either because the registered voters did not possess a passport, or because it was not possible to conduct a match, due to the lack of a usable Social Security number.

59. This spreadsheet did not contain the voter registration number of the registered voters on Professor Hood's no-match list. Therefore, it was not possible to merge this spreadsheet with the voter file using this unique identifier. However, it was possible to use the Social Security number to, first, merge the data in this spreadsheet with the data from the military ID spreadsheet described above. Once these two spreadsheets were merged, it was then possible to use the voter registration number from the military ID spreadsheet to merge with the voter file, in order to ascertain the races of the registered voters on these lists.

60. Using the data contained in these spreadsheets, I was able to allocate each person on Professor Hood's no-match list into one of four categories: (1) possessed neither a military ID nor a passport, (2) possessed only a military ID, (3) possessed only a passport, and (4) possessed both a military ID and a passport. Table 8 summarizes the distribution of registered voters in each of these categories, for white and African American voters, along with the entire population of voters on the no-match list. In Attachment F, I report the full set of numbers backing up this table.

Table 8. Racial characteristics of holders of military IDs and passports, among registrants on Professor Hood's no-match list.

	Type of ID held				
Race	Neither	Military ID only	Passport only	Both	Total
African American	82.2% (52,424)	4.0% (2,558)	10.9% (6,954)	2.9% (1,845)	100.0% (63,781)
White	60.7% (90,148)	2.2% (3,328)	34.6% (51,306)	2.5% (3,660)	100.0% (148,442)
Total	66.7% (146,809)	2.8% (6,173)	27.9% (61,316)	2.7% (5,859)	100.0% (220,157)

χ^2 test statistic against the null hypothesis that the distribution of individuals possessing different federal IDs is equal across racial groups: 14,000, with 21 degrees of freedom, *p*-value < 0.05%.

61. Each row accounts for federal identification held by the indicated racial group. For instance, 63,781 African Americans were included in the analysis. Of these, 82.2% held neither form of federal identification (52,424 in actual numbers), 4.0% held only a military ID card, 10.9% held only a passport, and 2.9% held both a military ID card and a passport.

62. Passport-holding among white registrants on Professor Hood's no-match list is more than triple the rate compared to African American registrants. Although the percentage of military ID-holding among African Americans in South Carolina is greater than for white registrants, the overall number of registrants on the no-match list who hold only a military ID is very small, compared to the number holding a passport. Therefore, statistics describing the overall racial composition of registrants who hold *either* form of identification are dominated by holders of passports.

63. The most important comparison in Table 8 is between the percentage of African American registrants who hold *neither* form of identification (82.2%) and the percentage of white registrants who hold neither form of identification (60.7%). This represents a difference of 21.5 percentage points.

64. It is clear, from Professor Hood's own no-match list, that whites are favored among those who would most likely have to depend on a federal identification card in order to vote.

65. Finally, it is possible to take the results reported in Table 8 and augment Professor Hood's analysis in Table 4 of his declaration,[21] in which he calculates the number of South Carolinians who lack a driver's license or SCDMV-issued ID card by race and ethnicity, by factoring in South Carolina voters who possess a military ID card or a passport. The results of this analysis are summarized below in Table 9.

[21] Hood Declaration, at 14.

Table 9. Augmentation of Professor Hood's Table 4 analysis of South Carolinians lacking a driver's license or SCDMV-issued ID to reflect the possession of military IDs and passports.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Total number of registrants	Percent of Total Registrants	Registrants without DMV-Issued ID	Registrants with a passport or military ID	Registrants without DMV-Issued ID or federal ID	Percent of Racial Category	Difference between White ID Holding
Non-Hispanic White	1,935,788	69.4%	149,407	58,294	91,113	4.7%	—
Minority	839,934	30.1%	70,866	14,089	56,777	6.8%	2.1%
African American	786,788	28.2%	64,964	11,357	53,607	6.8%	2.1%
Hispanic	28,921	1.0%	3,591	1,392	2,199	7.6%	2.9%
Asian	18,692	0.7%	1,730	1,189	541	2.9%	-1.8%
Native American	5,533	0.2%	581	151	430	7.8%	3.1%
Other/Unknown	14,687	0.5%	2,081	960	1,121	7.6%	—
Total	2,790,409	—	222,354	73,348	149,006	5.3%	—

66. The first three columns of Table 9 repeat the numbers that are reported in Table 4 of Professor Hood's declaration. Column 4 reports the number of registrants lacking a driver's license or SCDMV-issued ID who nonetheless possess *either* a military ID or passport — 58,294 non-Hispanic whites, 11,357 African Americans, etc. Column 5 reports the results of subtracting column 4 from column 3, which is the new estimate of the number of voters without any form of the requisite identification under Act R54. Column 6 expresses the number of registrants in a racial category who do not possess a SCDMV-issued ID, military ID, or passport as a percentage of all registrants in that racial group. The final column reports the difference of this percentage from that of white registrants.[22]

[22] The numbers reported in columns (5) to (7) in Table 9 correspond with the numbers in the last three columns of Table 6 of Professor Hood's Supplemental Declaration. *See* Hood Supplemental Declaration, at 10. The numbers are not precisely the same, which is undoubtedly due to different cases that were randomly included and excluded when we removed duplicates from the voter file.

67. With federal ID cards accounted for, Professor Hood's own analysis shows a statistically significant difference between whites and African Americans in the possession of an identification card that could be produced in order to vote.[23]

68. Professor Hood also incorporates the results of the matching with the federal ID databases in his supplemental report.[24] His results are entirely consistent with my own independent analysis of the data, in that he shows that when the possession of federal photo ID cards and passports is taken into account, the racial disparity in the impact of Act R54 grows.

69. Despite the patterns shown in Tables 5, 6, 9, and 10 of the Hood Supplemental Report, which show that the racial disparity has clearly grown, compared to Tables 2 and 4 of his original report, Professor Hood's commentary emphasizes that the *numbers* of affected people have fallen. This is, of course, true. However, whether one racial category bears a disproportional burden in the implementation of a law is not based on the simple number of affected individuals, but on the different *proportions* of individuals in each group who are affected (hence, the word *dis*proportional). In the comparison of the effect of a policy on two groups, Group A and Group B, if Group B is a minority, then it is quite possible for a larger *proportion* of Group B's members to be affected by a policy, and yet for the actual *number* of people affected by the policy to be greater with Group A. However, that fact would be true simply because there are more members from Group A, not because the impact of the policy was greater on members of Group A.[25]

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[23] Hood Supplemental Declaration, at 7.
[24] *Id.* at 7–10, 12–14.
[25] An extreme hypothetical example can help illustrate the point. Imagine a state in the 1950s that consisted of 800,000 white residents of voting age and 200,000 African American residents of voting age. Suppose the state passed a law, such as a poll tax, that raised a new barrier to voting that led 25% of white voting-age citizens and 90% of African American voting-age citizens to be disenfranchised. The *number* of disenfranchised white voters would be 200,000 (= 25% × 800,000), while the *number* of disenfranchised African American voters would be 180,000 (= 90% × 200,000). This would reduce the number of whites in the electorate to 600,000 (= 800,000 - 200,000) and the number of African Americans in the electorate to 20,000 (=200,000 - 180,000). The effect of the

70. This confusion of *numbers* with *proportions* is particularly acute in the analysis presented on page 12 of Professor Hood's supplemental report. For instance, Professor Hood notes that "[i]n absolute numbers more non-Hispanic whites currently lack Act R54 ID compared to minority registrants (51,700 versus 36,959)."[26] However, this is simply the result of the fact that in South Carolina there are more non-Hispanic whites who are active registrants than there are minority registrants (1,901,788 versus 818,357, using Professor Hood's numbers in his Table 9).[27] The correct measure of proportionality is the *ratio* of these numbers, not the actual numbers themselves. Thus, for instance, using Professor Hood's numbers, the ratio of white registrants currently lacking an "Act R54 ID" to minority registrants lacking an ID is 1.4 (=51,700/36,959). The ratio of white registrants-to-minority registrants overall is 2.3 (=1,901,788/818,357). A measure of *disproportionality* using these numbers is the ratio of the two ratios — 0.61 (=1.4/2.3).[28] In words, this ratio means that a white registrant is only 61% as likely to lack an "Act R54 ID" as a minority registrant.

71. The next paragraph is similarly misleading, in which it is noted that "57,363 non-Hispanic white registrants are not currently in possession of Act R54 ID compared with 41,395 minority registrants."[29] Again, using Professor Hood's numbers, this ratio is similarly 1.4

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law would be to reduce the percentage of the electorate that was African American from 20% (= 200,000/1,000,000) to 3% (=20,000/[600,000+20,000]). No one would conclude that white residents were more adversely affected by this law than African Americans. Rather, all would agree that African Americans were more adversely affected, because the effect of the law reduced the *proportion* of African Americans in the electorate from 20% to 3%, raised the *proportion* of whites in the electorate from 80% to 97%, and adversely affected a larger *proportion* of African Americans than whites (25% vs. 90%). However, the logic of Professor Hood's commentary would lead one to conclude that the greater adverse impact was on white voters.

[26] *Id.* at 12.

[27] *Id.* at 13.

[28] When the two proportions are equal (i.e., the ratio just calculated is equal to 1), then a white registrant is just as likely to lack an "Act R54 ID" as a minority registrant. When the ratio just calculated is less than 1, then a white registrant is less likely to lack an "Act R54 ID" as a minority registrant. When the ratio is greater than 1, then a white registrant is more likely to lack an "Act R54 ID" as a minority registrant.

[29] *Id.* at 12.

(=57,363/41,395). The comparison ratio, involving all active and inactive registrants, is also 2.3 (=1,935,787/839,934), leaving the measure of disproportionality again at 0.61.

The no-match data from DOD and DOS demonstrate even wider racial disparities in my original analysis

72. The DOD and DOS performed a similar matching exercise on the no-match list that I produced in the analysis of my original declaration. The spreadsheet I provided to the DOD and DOS consisted of the no-match list I produced when I ran the matching analysis in my original declaration, reporting the results in Table 4 and Attachment Q.[30] The spreadsheets I provided the DOD and DOS contained 173,250 records.

73. It is important to know that the matching procedure employed by the DOD and DOS against my list paralleled Professor Hood's matching algorithm, but did not correspond precisely to the matching algorithm I used. In particular, I did no matching on last names, and my Social Security number matching included matching on gender, as well. The result will be that the merges performed on my no-match list by the DOD and DOS may misestimate slightly the degree to which registrants on my no-match list possess either a military ID or a passport. However, the matching outcomes against my no-match list are broadly congruent with the results of matching against Professor Hood's no-match list. Therefore, I am confident that the results I have received back from the DOD and DOS allow me to make valid inferences about racial disparities in the possession of military ID cards and passports.

74. The Excel spreadsheet I received from the DOD that merged my own no-match list with military ID records contained two worksheets. One worksheet consisted of the 172,988 cases in which the DOD had sufficient information in which to attempt a merge between my no-

[30] Stewart Declaration, at 36, 96.

match list and the military ID database. This merging procedure yielded 7,299 cases in which the registrants on my no-match list possessed a military ID card, leaving 165,689 cases in this worksheet unmatched with a military ID record. The other worksheet I received back from the DOD consisted of the 262 cases in there was insufficient information in my no-match list for the DOD to attempt a merge.

75. Each worksheet in this spreadsheet contained the voter registration number of the registered voters on my no-match list, along with the Social Security number. Using the voter registration number, it was possible to merge the cases reflected in this spreadsheet with the South Carolina voter list, to ascertain the racial characteristics of those with, and without, military IDs. Using the Social Security number, it was possible to merge the cases in this spreadsheet with the passport file, described below.

76. The Excel spreadsheet I received from the DOS contained two worksheets. One worksheet consisted of 34,617 cases in which it was ascertained that the registrant possessed a valid passport. The other worksheet consisted of 138,633 cases in which there was no match, either because the registered voters did not possess a passport, or because it was not possible to conduct a merge, due to the lack of a usable Social Security number.

77. This spreadsheet also did not contain the voter registration number of the registered voters on my no-match list. Therefore, it was not possible to merge this spreadsheet directly with the voter file using this unique identifier. However, it was possible to use the Social Security number to, first, merge the data in this spreadsheet with the data from the military ID spreadsheet described above. Once these two spreadsheets were merged, it was then possible to use the voter registration number from the military ID spreadsheet to merge with the voter file, in order to ascertain the races of the registered voters on these lists.

78. Using the data contained in these spreadsheets, I was able to allocate each person on my no-match list to one of four categories: (1) possessed neither a military ID nor a passport, (2) possessed only a military ID, (3) possessed only a passport, and (4) possessed both a military ID and a passport. Table 10, below, summarizes the distribution of active voters in each of these categories, for white and African American voters, along with the entire population of registrants on the no-match list. In Attachment G, I report the complete data supporting this table.

Table 10. Racial characteristics of holders of military IDs and passports, among registrants on my no-match list.

	Type of ID held				
Race	Neither	Military ID only	Passport only	Both	Total
African American	88.0% (60,913)	2.9% (2,019)	7.3% (5,070)	1.8% (1,252)	100.0% (69,254)
White	71.2% (69,870)	1.9% (1,902)	25.1% (24,607)	1.8% (1,730)	100.0% (98,109)
Total	77.7% (134,508)	2.4% (4,083)	18.1% (31,395)	1.9% (3,216)	100.1%[a] (173,202)

χ^2 test statistic against the null hypothesis that the distribution of individuals possessing different federal IDs is equal across racial groups: 10,000, with 21 degrees of freedom, *p*-value < 0.05%.

[a]Sums do not add to 100% because of rounding.

79. Each row of Table 10 accounts for federal identification held by the indicated racial group. For instance, a total of 69,254 African Americans were included in the analysis. Of these, 88.0% held neither form of federal identification (60,913 in actual numbers), 2.9% held only a military ID card, 7.3% held only a passport, and 1.8% held both a military ID card and a passport.

80. As with Professor Hood's no-match list, passport-holding among white registrants on my no-match list is more than triple the rate compared to African American registrants. The percentage of military ID-holding among African Americans in South Carolina, reflected in this

matching, is slightly greater than for white registrants. However, the overall number of registrants on this no-match list who hold only a military ID is also very small, compared to the number holding a passport.

81. The most important comparison in Table 10 is between the percentage of African registrants who hold *neither* form of identification (88.0%) and the percentage of white registrants who hold neither form of identification (71.2%). This represents a difference of 16.8 percentage points.

82. It is clear from this analysis that whites are favored among those who would most likely depend on a federal identification card in order to vote.

83. Finally, it is possible to take the results reported in Table 10 and augment the analysis I reported in Table 4 and Attachment Q of my original declaration.[31] Table 11 below summarizes the results of shifting registrants from the original no-match list into a "matching" status, augmenting the analysis I reported in Table 4 of my original declaration. Full details of my calculations are provided in Attachment H.

Table 11. Percentage of active voters without the requisite identification, before and after taking into account military IDs and passports.

	Original declaration		After accounting for military IDs and passports	
Race	Pct.	Number of registrants	Pct.	Number of registrants
Asian American	6.2%	1,047	2.6%	436
African American	9.5%	69,283	8.3%	60,913
Hispanic	10.0%	2,586	6.7%	1,742
Mixed	14.4%	23	12.3%	20
Native American	10.1%	502	8.3%	411
Other	12.9%	1,668	8.4%	1,094
Unknown	31.5%	28	24.7%	22
White	5.5%	98,113	3.9%	69,870
Total	6.7%	173,250	5.2%	134,508

[31] Stewart Declaration, at 36, 96.

84. After accounting for federal identification, the disparity between whites and African Americans who are in the category of voters who do not possess the requisite identification grows, from a difference of 4.0 percentage points (9.5% - 5.5%), when we only consider driver's licenses and SCDMV-issued ID cards, to a difference of 4.4 percentage points (8.3% - 3.9%), when we add information about the possession of military IDs and passports. Stated another way, after accounting for military IDs and passports, African Americans are more than twice as likely[32] as white voters not to possess an ID that is acceptable under Act R54.

85. As the summary in Table 11 indicates, once we take into account the racial distribution of those who hold federal identification cards, among those without a driver's license or SCDMV-issued ID card, the conclusion I reached in my original declaration, that Act R54 imposes a disproportionate burden on the African American voters of South Carolina, compared to white voters, is strengthened.

The lack of tests of statistical significance in Professor Hood's original declaration

86. Section V of Professor Hood's original declaration is devoted to his efforts to determine how many South Carolina registrants have a driver's license or SCDMV-issued identification card. The principal findings of this section are summarized in his Table 2, which reports his estimate of the number of *active* registrants who lack a driver's license or SCDMV-issued identification card, and Table 4, which reports his estimate of the number of active *and* inactive residents without these cards.[33] In each case, he reports estimates broken down by race and ethnicity.

[32] The calculation is (8.3/3.9) = 2.13, which means that the rate of African American non-possession of an ID acceptable under Act R54 is more than twice that of whites.
[33] Hood Declaration, at 11, 14.

87. Above, I show that Professor Hood's analysis leads to a systematic under-estimation of the racial disparities in the possession of driver's licenses and SCDMV-issued ID cards. It should also be noted that the racial differences he characterizes as being trivial in size[34] are, nonetheless, highly unlikely to have arisen due to random chance. This important fact is missing from his report, to the degree that he reports no formal statistical tests to ascertain whether the differences he is describing are different from zero to a statistically significant degree.

88. In reporting the results of statistical procedures in the social sciences, it is generally expected that any report of a numerical difference between groups will be accompanied by a report of a statistical test to quantify the probability that the difference observed may have occurred due to random chance. This norm also extends to situations in which the researcher is claiming to have found *no* difference between groups. The reason for the norm of reporting statistical tests is to discipline researchers to accept or reject hypotheses based on objective criteria, rather than relying on *ad hoc* judgments.[35]

89. In the case of the differences among racial/ethnic groups reports in Tables 2 and 4 of Professor Hood's original report, pertaining to the lack of a driver's license or SCDMV-issued ID card, Professor Hood does not report the results of any statistical test he may have performed to ascertain whether the differences across groups he observed may have occurred due to random

[34] Professor Hood describes the difference between African American and white active registrants, in the percentages who do not possess a driver's license or SCDMV-issued ID card, as "*only* four-tenths of a percentage point. . ." [emphasis added]. Hood Declaration, at 10. In the first paragraph of page 13 of Professor Hood's report, where he reports a similar difference, this time calculated on a larger sample of active and inactive registrants, he characterizes the difference as "again very small."

[35] Professor Hood himself follows these norms in the three journal articles of his own research that he cites in his original declaration. M.V. Hood III and Charles S. Bullock III, *Worth a Thousand Words?: An Analysis of Georgia's Voter Identification Statute*, 36 AMER. POL. RES. (2008), at 566–569, 571, 572; M.V. Hood III and Charles S. Bullock III, *An Empirical Assessment of the Georgia Voter Identification Statute*, STATE POL. AND POL'Y Q. (forthcoming 2012), at 15–18; Seth C. McKee, M.V. Hood III, and David Hill, *Achieving Validation: Barack Obama and Black Turnout in 2008*, STATE POL. AND POL'Y Q. (2012), at 13.

chance. In Table 2, Professor Hood reports, for instance, that 7.12% of white active registrants did not possess a driver's license or SCDMV-issued ID card, compared to 7.55% of African American registrants, for a difference of 0.43 percentage points.[36] The two statistical tests that are generally performed to ascertain the statistical significance of the differences between groups are the χ^2 (pronounced chi-square) test and the *F*-test, alternatively called an Analysis of Variance (ANOVA) test. When I perform both the χ^2 and the *F*-test on the differences reported across all racial/ethnic groups in Table 2, I calculate that the probability these differences occurred due to random chance are less than 5-in-10,000.[37]

90. Because whites constitute 69.5% of registrants on the voter list and African Americans constitute 28.4% of registrants in the voter list, compared to 2.4% for all other racial categories combined, it is also useful to conduct these statistical tests confining ourselves only to African American and white registrants.[38] When I perform both the χ^2 and the *F*-test on the differences between white and African American registrants reported in Table 2 of Professor Hood's report, I calculate that the probability these differences occurred due to random chance are also less than 5-in-10,000.[39]

91. In Table 4, Professor Hood reports that 7.72% of white registrants — active and inactive registrants combined — did not possess a driver's license or SCDMV-issued ID card,

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[36] Hood Declaration, at 9.

[37] I performed these statistical tests by entering the data from Table 2 into the statistical program Stata, version 12, and then issuing the commands that resulted in the calculation of the appropriate test statistics.

In the case of the χ^2 test, the test statistic was 1,800, with 5 degrees of freedom. In the case of the ANOVA analysis, the *F*-statistic was 370.05 with 5 degrees of freedom in the numerator and 2,734,528 degrees of freedom in the denominator. In all cases, the probability of observing test statistics this large, under the null hypothesis that there are no differences among the racial categories in the table can be rejected at a *p*-value of less than .05%. (See paragraph 19 in my original declaration, for a discussion of the definition of *p*-levels in statistical tests.)

[38] The racial composition statistics quoted here are taken from Attachment L of my original declaration.

[39] In the case of the χ^2 test, the test statistic was 149.9, with 1 degree of freedom. In the case of the ANOVA analysis, the *F*-statistic was 149.9, 1 degrees of freedom in the numerator and 2,668,468 degrees of freedom in the denominator. An alternative to the *F*-test is a difference-of-means *t*-test, which produces a *t*-statistic of 12.24. In all cases, the probability of observing test statistics this large, under the null hypothesis that there are no differences between white and African American registrants can be rejected at a *p*-level of less than .05%.

compared to 8.26% of African American registrants, for a difference of 0.54 percentage points among this group.[40]

92. When I perform both the χ^2 and the *F*-test on the differences reported across all racial/ethnic groups in Table 4 of Professor Hood's report, I calculate that the probability these differences occurred due to random chance are less than 5-in-10,000.[41] Similarly, when I perform both the χ^2 and the *F*-test on the differences between white and African American registrants alone reported in Table 4, I calculate that the probability these differences occurred due to random chance are also less than 5-in-10,000.[42]

93. Professor Hood does not report the results of any statistical tests in his Supplemental Report, particularly in Tables 5, 6, 9, and 10, which discuss racial disparities, and Tables 7 and 8, which report differences across people of different ages.[43] The racial disparities he reports in Tables 5, 6, 9, and 10 of his Supplemental Report are, in general, of greater magnitude than the disparities he reports in Tables 2 and 4 of his original report. Therefore, the χ^2 and *F*-test calculations I report above (see ¶¶ 89–92 *supra*) would yield even larger values for the test statistics, meaning we would be even *more* confident the differences he reports are not due to random chance.

94. Therefore, it is important to note that, despite the fact that Professor Hood initially termed the difference in the percentages of white and African American voters who do not

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[40] Hood Declaration, at 14.

[41] In the case of the χ^2 test, the test statistic was 1,900, with 5 degrees of freedom. In the case of the ANOVA analysis, the *F*-statistic was 379.4 with 5 degrees of freedom in the numerator and 2,790,403 degrees of freedom in the denominator. In all cases, the probability of observing test statistics this large, under the null hypothesis that there are no differences among the racial categories in the table can be rejected at a *p*-value of less than .05%.

[42] In the case of the χ^2 test, the test statistic was 149.9, with 1 degree of freedom. In the case of the ANOVA analysis, the *F*-statistic was 149.9, 1 degrees of freedom in the numerator and 2,668,468 degrees of freedom in the denominator. An alternative to the *F*-test is a difference-of-means *t*-test, which produces a *t*-statistic of 12.24. In all cases, the probability of observing test statistics this large, under the null hypothesis that there are no differences between white and African American registrants can be rejected at a *p*-level of less than .05%.

[43] Hood Supplemental Declaration, at 8, 10, 13, 14 and 11, 12. *See also* Rebuttal Declaration of M.V. Hood III, South Carolina v. United States (Case No. 1:12-CV-203-CKK-BMK-JDB), August 3, 2012, at 3 (hereinafter "Hood Rebuttal Declaration").

possess either a driver's license or SCDMV-issued ID as "very small,"[44] these differences are sufficiently large that, within the standards of the social sciences, the probability that they are merely the result of random variation is less than 5-chances-in-10,000. This is a degree of certainty that is 100 times greater than that typically used in the social sciences.[45] Even if one accepts Professor Hood's initial characterization that the percentages he reports are small, there is no doubting that his analysis shows that African American registrants always bear a disproportionate burden under Act R54, compared to white registrants.

Limitations to the Comparison of Georgia to South Carolina for the Analysis of Racial Disparities in the Effects of Act R54

95. In Section VI of his original report, Professor Hood draws on research he has conducted, in collaboration with other scholars, into the implementation of Georgia's photo voter identification law, which went into effect prior to the 2008 presidential election. Based on the review of this research, Professor Hood concludes that while the law had a "depressive effect on overall turnout," racial and ethnic minorities in Georgia were not disproportionately affected by the implementation of the new law.[46] Later, in his overall conclusion, Professor Hood claims that the South Carolina and Georgia laws are "very similar overall."[47] He ends his report by applying the experience of Georgia in the implementation of their law by stating that he has "no reason to suspect that the implementation of Act R54 in South Carolina will produce a racially disparate impact on minority turnout."[48]

[44] Hood Declaration, at 13.
[45] As I note in ¶ 19 of my original declaration, the standard *p*-level that is accepted for a conclusion of statistical significance is 5%.
[46] Hood Declaration, at 17.
[47] *Id.* at 18.
[48] *Id.* at 19.

96. The inferences that Professor Hood draws about the Georgia experience are both misleading and inappropriate in application to South Carolina. I focus here on three major aspects of my disagreement with Professor Hood's analysis: (1) the inapplicability of the Georgia research he cites in determining whether the Georgia law in fact had a disparate racial impact, (2) the inaccurate equation of Georgia's photo voter identification law to South Carolina's law, and (3) the inaccurate characterization of absentee voting as a remedy for South Carolina voters who lack the requisite identification.

The inapplicability of Georgia research

97. Professor Hood cites research he has done with his colleague, Professor Charles S. Bullock III, concerning the implementation of Georgia's photo ID law in the 2008 presidential election, to bolster his argument that photo voter ID laws of the type passed by South Carolina do not have racially disparate effects when implemented. Below, I argue that *any* comparison with Georgia is inappropriate, because Georgia's photo voter ID law is much more flexible than Act R54. Here, I argue that Professor Hood's analysis of the implementation of the Georgia law in 2008 provides no direct evidence about its discriminatory effect *even for the state of Georgia.*

98. The most relevant work that Professor Hood cites is an article forthcoming in the *State Politics and Policy Quarterly* entitled "Much Ado About Nothing?: An Empirical Assessment of the Georgia Voter Identification Statute." This article was coauthored with Professor Charles S. Bullock III. I have not been able to examine the final version of this yet-to-be-published article, but I have examined a draft of the article dated March 2012 simply entitled

"An Empirical Assessment of the Georgia Voter Identification Statute," which was identified as being "revised and resubmitted for publication at *State Politics and Policy Quarterly*."[49]

99. The core of the Hood-Bullock analysis is a multivariate statistical study that predicts the rates at which registered Georgia voters turned out in the 2004 and 2008 elections, as a function of whether they appeared on a list of voters who did not possess a driver's license, which was generated by the Georgia Department of Motor Vehicles in August 2007. The statistical procedure that Professors Hood and Bullock use is called "logistic regression," which is analogous to the better-known linear regression, but which is better suited to use when the outcome (dependent variable) is either 1 (voted in the election) or 0 (did not vote).

100. The key set of findings in the Hood-Bullock paper is reported in their Table 2.[50] First, applying statistical controls for sex, age, and average income in the voter's ZIP code, they conclude that African Americans did not vote at a statistically significant lower rate than white voters in either election. (This is their Model 1.) Second, adding a series of "interaction terms" to help ascertain the differences in turnout rates for different racial/ethnic groups in the 2004 and 2008 elections, they conclude that African Americans turned out at *higher* rates than whites, and that the "depressive effect" of the photo ID law fell more heavily on whites than on African Americans. (This is their Model 2.)[51]

101. The first thing to note about the Hood-Bullock analysis is that nowhere do they present the *actual turnout rates* for African Americans with and without driver's licenses, and contrast those turnout rates with whites who did and did not possess drivers licenses.[52] Doing so,

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[49] M.V. Hood III and Charles S. Bullock III, *An Empirical Assessment of the Georgia Voter Identification Statute* (March 2012) (unpublished manuscript, on file with author) (hereinafter "Hood and Bullock").
[50] *Id.*, at 29.
[51] Their Model 3, which focuses on age, is less relevant to this case, and I do not discuss it here.
[52] It is also the case that Professors Hood and Bullock do not report the actual turnout rate differences in Georgia between white and African American registrants. In 2004, according to Georgia Secretary of State turnout statistics, 80.4% of registered whites voted in 2004, compared to 72.2% of registered African Americans, for an 8.2

for each election (2004 and 2008), is necessary if one wants to calculate the *actual* disparity in turnout rates between whites and African Americans who possessed and did not possess driver's licenses.

102. This is significant because, ever since the decision in the *Thornburg v. Gingles* case, an important baseline for analysis when the question of racially disparate results arises is the difference in behavior across racial groups *irrespective of* any confounding factors that might arguably cause such differences of behavior to arise.[53] The simple bivariate correlation between race and behavior may not be the end of the analysis, but it is an indispensible and powerful beginning of the analysis.

103. The only actual descriptive statistics reported in the Hood-Bullock paper are on page 15, where they present a comparison of turnout rates in 2004 between those who lacked a driver's license in 2007 (47.6%) with the turnout rate of those who possessed a driver's license in 2007 (72.9%).[54] They also compare the 2008 turnout rates between those who lacked a driver's license in 2007 (39.6%) and those who possessed a driver's license in 2007(70.0%).[55] The *gap* in 2004 turnout between those who did and did not possess a driver's license in 2007 was 25.3 percentage points (72.9% - 47.6%); in 2008, the gap grew to 30.4 percentage points. The growth in this gap is preliminary evidence that the implementation of the photo voter ID law

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percentage point turnout gap favoring white registrants. In 2008, the same reports show that 77.4% of white registrants voted, compared to a 75.8% turnout rate for African Americans, for a 1.6 percentage point gap in favor of white registrants. In contrast, the statistical analysis that controls for demographic factors obscures these actual turnout differences.

[53] Under Section 2 of the Voting Rights Act, "[p]laintiffs need not prove causation or intent in order to prove a prima facie case of racial bloc voting and defendants may not rebut that case with evidence of causation or intent." *Thornburg v. Gingles*, 478 U.S. 30, 74 (1986); *see id.* at 100 ("Insofar as statistical evidence of divergent racial voting patterns is admitted solely to establish that the minority group is politically cohesive and to assess its prospects for electoral success, I agree that defendants cannot rebut this showing by offering evidence that the divergent racial voting patterns may be explained in part by causes other than race[.]") (O'Connor, concurring).

[54] Hood and Bullock, at 15.

[55] *Id.*

in Georgia adversely affected registrants who did not possess a driver's license, measured by turnout rates.

104. The next logical step in this analysis would be to further break down the turnout rates *by race* in each year. The purpose of this would be to see, for instance, whether there were turnout gaps between white and African American registrants without a driver's license in 2004 and 2008 — and to compare the change in this gap across time with any turnout gap between white and African Americans registrants who did possess a driver's license.

105. Rather than report these actual turnout rates — broken down *both* by race *and* driver's license status — the only reported turnout rates of this sort are *statistical estimates* of turnout rates in 2004 and 2008 *after* the statistical controls have been applied.[56] However, the statistical controls entered in the Hood-Bullock paper would tend to diminish any differences in the turnout rates between whites and African Americans. Therefore, it is impossible to use the analysis Professors Hood and Bullock perform a clean analysis of how turnout gaps changed from 2004 to 2008.

106. Professors Hood and Bullock show, through their statistical controls, that turnout is higher for female voters, older voters, and voters living in more affluent ZIP codes. For two of these three demographic controls — age and income — white voters have higher average values than African American voters. Using the most recent voter registration report from the state of Georgia, I calculate that the average African American registrant is 43.3 years old, compared to an average of 48.4 years for white registrants.[57] Using the same ZIP code dataset that I used in

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[56] *Id.*

[57] The most recent age distribution of Georgia voters was taken from the document labeled, "GEORGIA SECRETARY OF STATE - VOTER REGISTRATION SYSTEM - ACTIVE VOTERS BY RACE/GENDER - WITH AGE BREAKDOWN TOTALS - AS OF JUNE 01, 2012," http://sos.georgia.gov/elections/voter_registration/DocumentDirect%20SSVRZ193.pdf. This document presents statistics concerning the number of registered voters, by race and sex, within age categories (18-24, 25-29, 30-34, 35-40, etc.) Using standard conventions to estimate means of variables using categorical data, I treated everyone

my original declaration, I calculate that the average per capita income of residents living in the 1,641 ZIP codes with the highest percentage population that is African American in the Peach State was $17,601, compared to an average per capita income among residents of the 1,642 ZIP codes with the lowest percentage population that is African American of $23,182.[58] The comparison in median household income among the ZIP codes that are above the median in African American population, to the average household income among the ZIP codes that are below the median in African American population, is $35,068 vs. $44,730.[59]

107. In other words, African Americans have significantly lower incomes and are significantly younger than white registrants in the state of Georgia. By controlling for these factors, the Hood-Bullock analysis treats African American and white voters as if they were, on average, equally wealthy and of equal age, which is clearly contrary to fact. The most that a regression coefficient showing "no racial effect" in turnout can demonstrate is that African American and white voters *of equal wealth, age, and sex* tended to vote at the same rates in Georgia in 2004 and 2008. However, this all-things-being-equal analysis is a statistical fiction that is not relevant in estimating racial disparities.

108. The effect of adding these statistical controls on the analysis can be seen when we compare the *actual* turnout rate in 2004 among those lacking a driver's license, reported on page 15 of the Hood-Bullock paper (47.6%) and the *calculated* turnout rate for this group, after taking

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within an age category as if they were the same age as the mean of the category. (For instance, I treated everyone in the 18-24 category as being 21 years old.) I set the age of registered voters in the 65-and-over category at 72 years. Using the categories directly, we see that, for instance, 53.7% of African American registered voters are 44 years old or younger, compared to only 40.7% of white registrants.

[58] The 2006-2010 American Community Survey reports that the per capita income of whites in Georgia (expressed in 2010 dollars) was $29,763; per capita income for African Americans was $17,781.

[59] The 2006-2010 American Community Survey reports that the median household income among whites in Georgia (expressed in 2010 dollars) was $56,595; median household income for African Americans was $41,807.

into account the statistical controls, which they report on page 16 of their paper (54.2%).[60] The following table compares the *actual* and *calculated* turnout rates for the relevant groups that are reported in this Hood-Bullock paper.

Table 12. Comparison of actual turnout rates with calculated turnout rates (after statistical controls) in Hood-Bullock analysis of Georgia voter ID law

2004	Actual	Calculated	Difference
Lacking ID	47.6%	54.2%	6.6%
Possessing ID	72.9%	76.1%	3.2%
Difference	25.3%	21.9%	-3.4%
2008			
Lacking ID	39.6%	45.1%	5.5%
Possessing ID	70.0%	73.5%	3.5%
Difference	30.4%	28.6%	-1.8%
Change in difference from 2004 to 2008	5.1%	6.7%	1.6%

109. Thus the introduction of statistical controls makes it appear that those lacking a driver's license in Georgia were more likely to vote in 2004 and 2008, relative to those who did possess a driver's license.

110. When Professors Hood and Bullock move on to analyze the groups reflected in Table 12 (those lacking ID vs. those possessing ID) separately by race, they never report the actual turnout rates of the relevant groups.[61] Instead, all we have are comparisons of racial differences *after statistical controls have been introduced*, which are discussed on pages 17 to 19 of their paper.[62] It is this discussion that leads them to conclude that white non-license holders were more adversely affected by the Georgia photo voter ID law than African American non-

[60] This latter quantity, 54.2%, is the basis of the report Professor Hood makes in the first paragraph of page 17 of his declaration that the calculated probability of turnout for registrants lacking photo identification in the 2004 election is .54,
[61] Hood and Bullock, at 15–19.
[62] *Id.* at 17–19.

license holders.[63] However, without knowing the actual turnout rates of the groups being compared, it is impossible to know how much of the pattern they report is a consequence of the statistical controls, which could very well have differential effects on subsets of racial groups broken down by whether or not they held a driver's license.

111. In addition to the failure to report the actual turnout rate differences that would be relevant to their analysis, there is a basic design flaw that undermines the validity of the Hood-Bullock findings. In particular, Professors Hood and Bullock claim that they are taking advantage of a "natural experiment,"[64] in which registrants in Georgia who did not possess a driver's license could be regarded as the "treated" group, and the remaining registrants — those with a driver's license — serve as the "control" group.

112. Such "quasi-experimental" research designs have a long history in the social sciences.[65] The need for such research designs arises from the fact that traditional experiments, in which some are *randomly* assigned to a treatment group and others are *randomly* assigned to a control group, are impractical, unethical, or both. In the case of the Georgia photo voter ID research, a traditional experiment — what Campbell and Stanley call a "pretest-posttest control group design"[66] — would require one to select a group of Georgia registrants and randomly assign some to have a driver's license, and others not to have one. The causal effect of the law would be measured by the turnout difference between the two randomly assigned groups.

113. The many problems of actually carrying out such a design in a setting like the Georgia photo voter ID law are obvious. As an alternative, researchers have identified situations in which the traditional control group experimental design might be approximated. One such

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[63] *Id.*
[64] *Id.* at 2.
[65] The classic treatment of the subject is DONALD T. CAMPBELL AND JULIAN C. STANLEY, EXPERIMENTAL AND QUASI-EXPERIMENTAL DESIGNS FOR RESEARCH (1963).
[66] *Id.* at 13–22.

situation bears a resemblance to that analyzed in the state of Georgia by Professors Hood and Bullock. The type of this design is termed the "non-equivalent control group" design in the classic Campbell and Stanley treatise.[67] In this research design, researchers study the behavior of two "naturally-forming" groups that already exist, one of which receives the intervention of a new policy, and the other that does not. (The classic examples are taken from educational research, in which one classroom might be the subject of a change in instructional method, whereas a similar classroom that was already formed would not be subject to the change, and therefore would be studied as a control.) So long as certain conditions are met, this alternative, quasi-experimental strategy can produce results that are nearly as valid as the traditional pretest-posttest control group design — at least as valid as is practically possible.

114. Professors Hood and Bullock place their hopes about the validity of their Georgia research on the assumption that whether or not one had a driver's license in 2008 was uncorrelated with one's desire to vote in the 2008 general election. More specifically, the validity of their research design hinges on an assumption that anyone in the study who acquired a driver's license between 2004 and 2008 did not do so expressly for the purpose of voting in 2008. Given the controversy surrounding the passage and implementation of the Georgia photo voter ID law — which Professors Hood and Bullock recount in their paper — this assumption is, on its face, implausible. Therefore, any study of the implementation of the Georgia photo voter ID law that employs the Hood-Bullock research design will produce biased results that exaggerate the effects of the law.

115. Another important limitation of the Hood-Bullock study is that their research design depends on *knowing* who possessed a driver's license in 2004 and who did not, along with knowing who possessed a driver's license in 2008 and who did not. However, the list of

[67] *Id.* at 47–50.

individuals not possessing a driver's license was produced in late 2007, three years after the 2004 general election. Professors Hood and Bullock report that they were only able to match 78.5% of the individuals on the 2007 no-match list with registrants from the 2004 election, compared to being able to match 98.2% of registrants from the 2008 election with the 2007 no-match list.[68] Thus, they can be relatively certain of the contrasting turnout rates between holders and non-holders of driver's licenses in the 2008 election, but they cannot be certain of the contrasting turnout rates between holders and non-holders of driver's licenses in the 2004 election.

116. Because the inferences Professors Bullock and Hood draw about the causal impact of the Georgia photo voter ID law depend on comparing turnout rates in 2008 with turnout rates in 2004, contrasting registrants who are *known* to have possessed driver's licenses in 2004 and 2008, the fact that they have a very imprecise estimate of which registrants actually had a driver's license in 2004 undermines the validity of their inferences. This is in addition to the fact that they cannot document registrants who moved from one driver's license status (possess/not possess) in 2004 to another status in 2008, which would be necessary for Professors Bullock and Hood to draw the causal inferences they wish to make.

117. By performing their statistical analysis using a multivariate statistical technique, it is clear that Professors Hood and Bullock are attempting to overcome problems associated with the fact that selection into the group that did not have a driver's license is correlated with a pre-existing interest in voting in the 2008 election. However, the only controls that Professors Hood and Bullock include in their analysis are age and a proxy variable for income. While these are variables that have been shown in many studies to influence the probability that someone will turnout to vote, they are far from being the only strong influences predicting levels of political participation. The extensive literature that has studied the determinants of voter turnout identify

[68] *Id.* at 13.

other variables that are also strong predictors of turnout, such as education, number of years living in one's current residence, whether one owns a home rather than renting, marital status, strength of party identification, and church attendance.[69] Without the inclusion of variables such as these as controls for propensity to vote in 2008, Professors Hood and Bullock engage in an inadequate attempt to control for the non-random selection into the no-driver's-license group.

118. On the whole, then, the research design of the Hood-Bullock paper that studies the implementation of the Georgia photo voter ID law in 2008 is inadequate for estimating the effects of increasing the stringency of ID requirements on the differential turnout rates of African American and white voters. Selection into the groups of registrants with and without driver's licenses is clearly correlated with anticipation on the part of registrants about whether they intended to vote in 2008. This produces biases on the estimated effects reported in the Hood-Bullock study. The inclusion of demographic controls to account for non-random selection is an inadequate solution to the research design problem. In addition, the paper does not study the contrasting behavior of registrants who are *known* to have possessed a driver's license in 2004 (or not) with registrants who are *known* to have possessed a driver's license in 2008. Rather, it is simply assumed that everyone who had a license in 2007 did not have one in both 2004 and 2008, and that everyone who did not have a license in 2007 had one in neither 2004 or 2008. Therefore, claims about how turnout rates changed between 2004 and 2008 among subgroups of registrants are not based on *known* patterns of driver's license possession, but are based on *assumed* patterns of driver's license possession.

119. Finally, Professor Hood's declaration in Section VI never mentions the influence of the candidacy of Barack Obama on turnout among African Americans in the 2008 presidential

[69] RAYMOND E. WOLFINGER AND STEPHEN J. ROSENSTONE, WHO VOTES (1980); STEVEN J. ROSENSTONE AND JOHN MARK HANSEN, MOBILIZATION, PARTICIPATION, AND DEMOCRACY IN AMERICA (1993); Benjamin Highton, *Easy Registration and Voter Turnout,* 59 J. POL. 565 (1997).

election, especially in battleground and southern states, such as Georgia, nor does he mention evidence of increased racially polarized voting in states covered by Section 5 of the Voting Rights Act, which would be consistent with the pattern the Hood-Bullock paper reports, of reduced turnout among white voters in Georgia.[70]

120. The pattern Professor Hood observes, that the turnout rate among registered African Americans in Georgia increasing between 2004 and 2008 despite the imposition of the new photo voter ID law, is true; the accompanying pattern he observes, that the turnout of white registered voters in Georgia decreased between 2004 and 2008, is also true. However, Georgia was not alone in this pattern. The same pattern can be confirmed using registration reports posted on the web sites of the boards of elections in South Carolina and Louisiana, two states that also report statistics about voter registration and turnout by race.[71]

121. In Louisiana, African American turnout went from 61.1% of registered voters in 2004 to 64.6% in 2008, an increase of 3.5 percentage points. Among whites, turnout went from 70.4% to 69.5%, a decrease of 0.9 percentage points.[72]

122. Within South Carolina itself, turnout among registered African American voters rose from 65.8% in 2004 to 76.2% in 2008, an increase of 10.4 percentage points.[73] The growth

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[70] Stephen Ansolabehere, Nathaniel Persily, and Charles Stewart III, *Race, Region, and Vote Choice in the 2008 Election: Implications for the Future of the Voting Rights Act*, 123 HARV. L. REV., 1385 (2010). *See also* Kristen Clarke, *The Obama Factor: The Impact of the 2008 Presidential Election on Future Voting Rights Litigation*, 3 HARV. L. & POL'Y REV. 59 (2009); MICHAEL TESLER AND DAVID O. SEARS, OBAMA'S RACE (2010); and Benjamin Highton, *Prejudice Rivals Partisanship and Ideology When Explaining the 2008 Presidential Vote Across the States*, 44 PS POLIT SCI & POL 530 (2011).

[71] Only Florida, Georgia, Louisiana, South Carolina, and North Carolina record the race of registered voters. The web sites of Florida and North Carolina do not allow the public to query the racial composition of voters who turned out in general elections; of these two states, only North Carolina makes the racial breakdown of its registration list available online. For these reasons, I do not provide an account of the change in voter turnout in 2004 and 2008, by race, for Florida and North Carolina.

[72] The Louisiana turnout and registration statistics were accessed via these two online files: http://electionstatistics.sos.la.gov/Data/Post_Election_Statistics/Statewide/2004_1102_sta.txt and http://electionstatistics.sos.la.gov/Data/Post_Election_Statistics/Statewide/2008_1104_sta.xls.

in African American turnout in South Carolina also contrasts with the turnout rates of white voters in South Carolina, which went from 72.3% in 2004 to 75.4% in 2008, an increase of only 3.1 percentage points.[74]

123. Because no other states publish the necessary data from their voter registration files to demonstrate how common the racial turnout patterns Professor Hood observes in Georgia, it is necessary to rely on survey research to establish the more general trend. The Voting and Registration Supplement (VRS) of the Current Population Survey (CPS) is the canonical dataset in political science for studying voter turnout patterns. Using the VRS to estimate African American and white turnout in 2008 and compare it to 2004, we find that African American turnout went up nationwide by 5.6 percentage points from 2004 to 2008, compared to an increase of 0.5 percentage points among whites.[75]

124. Using reports from exit polls taken in the 2004 and 2008 elections, research I co-authored with Professors Stephen Ansolabehere and Nathaniel Persily that was published in the *Harvard Law Review* showed that the share of the electorate that was composed of Africans Americans among states fully covered by Section 5 of the Voting Rights Act rose between 2004 and 2008, from 19% of the electorate to 21%, while the share of the electorate in these same

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[73] Note that this growth in African American turnout in South Carolina from 2004 to 2008 is greater than the growth in African American turnout in Georgia, which grew by only 3.6 percentage points, from 72.2% in 2004 to 75.8% in 2008.

[74] The South Carolina turnout and registration statistics were accessed by issuing queries of the following web site: http://www.scvotes.org/statistics/voter_history.

[75] Turnout rates calculated using the VRS are estimated, based on the self-reported responses of registered voters, or reports of family members who are asked to report on whether adult members of the household turned out and voted. As is made clear when we compare the change in turnout rates among African Americans that is reflected in the VRS survey with the change in turnout rates among African Americans that is reflected in official state registration records, the VRS survey provides a likely over-estimate of the increase in African American participation across the 2004 and 2008 elections. For instance, the increase in African American turnout that is reflected in the Georgia registration statistics is 3.6 percentage points from 2004 to 2008 (from 72.2% to 75.8%), compared to the VRS estimate of an 8.5 percentage point increase (from 83.6% to 92.1%). However, it is reasonable to assume that such an over-reporting phenomenon occurred across all states. Therefore, it is valid to use the VRS to compare changes in turnout rates across time, or to compare turnout rates across states at one moment in time.

states that was composed of whites fell from 69% to 68%.[76] Nationwide, the African American share of the electorate rose from 11% in 2004 to 13% in 2008, at the same time the white share of the nationwide electorate fell from 78% to 74%.

125. The political differences between 2004 and 2008, and in particular, turnout and electoral support patterns related to race, are important for two reasons, in the evaluation of Professor Hood's report — especially Section VI of his report,[77] which relies heavily on the Hood-Bullock paper. First, they provide strong evidence that the turnout patterns that Professor Hood observes in Georgia after the state implemented a photo voter ID law — of African American turnout going up and white turnout going down — was a general pattern throughout the South and, indeed, throughout the country.

126. Second, the racial dynamics of the 2008 election undermine the claim made by Professors Hood and Bullock that they are analyzing a "natural experiment" when they compare turnout patterns of holders and non-holders of driver's licenses in Georgia in 2004 and 2008. It is reasonable to assume that many African Americans in Georgia who did not possess a driver's license in 2007 — when the Georgia no-match list Professor Hoods and Bullock analyze was generated — were so motivated by the historic nature of the 2008 election that they undertook extra efforts to procure a driver's license after the list was generated, so that they might vote.[78] These are voters who appear *in the analysis* not to possess a driver's license, when in fact they did, once the election was held. Therefore, individuals the analysis assumes were in the

[76] Ansolabehere, Persily, and Stewart, at 1412.
[77] Hood Deposition, at 16–17.
[78] It is also reasonable to believe that some white registrants were similarly motivated by the historic nature of the election to acquire a driver's license in order to vote. All that is required of the argument being made in this paragraph to hold is for African American registrants to be more motivated by the historic nature of the election than white registrants.

"treatment" group (non-possessors of driver's licenses) were in fact in the "control" group (possessors of driver's licenses).

127. Finally, if African American registrants who did not possess a driver's license in 2007 were more motivated to turnout in 2008 than white registrants who did not possess a driver's license in that year, it is reasonable to assume that they would have more likely voted using one of the other forms of photo identification that are allowable under the Georgia law. (See paragraph 130 *infra.*) However, this would mean that the racial differences in turnout rates between African American and white registrants who did not possess a driver's license in 2007 were caused by the special circumstances of the 2008 election, not by the implementation of the new photo voter ID law.

128. Therefore, I conclude that the analysis provided by Professor Hood in Section VI of his report does not rely on the statistical tests or research design that would be necessary to reach the relevant conclusions about the effect of changes to the photo voter ID law in Georgia. Even if they did, the failure to provide evidence about differences in turnout among African Americans (compared to white voters) in Georgia *compared to other states* makes it impossible to draw conclusions about the influence of adopting photo voter ID laws in the first place.

The inaccurate equation of Georgia's photo voter identification law with South Carolina's Act R54

129. Professor Hood minimizes the vast differences in the types of acceptable identification in the South Carolina and Georgia photo voter ID laws, characterizing the difference as being a matter of "mix," with South Carolina offering two "notable differences" to Georgia's supposed inflexibility in implementing its photo voter ID law.[79]

[79] Hood Declaration, at 18.

130. In fact, the difference between Georgia and South Carolina is not a matter of "mix," but a matter of length. The list of acceptable photo ID's in South Carolina is a small subset of the acceptable forms of ID in Georgia, as is demonstrated in Table 13 below, which lists the acceptable forms in the two states side-by-side.

Table 13. Comparison of Georgia and South Carolina photo ID requirements

Georgia[a]	South Carolina (Act R54)
Georgia driver's license which was properly issued by the appropriate state agency	Valid and current S.C. driver's license
Valid Georgia photo voter ID card	Valid and current voter registration card with photo
Any other valid photo ID card issued by a branch, department, agency, or entity of the State of Georgia, any other state, or the United States authorized by law to issue personal identification	Valid and current SCDMV-issued photo ID
Valid U.S. passport	Valid and current U.S. passport
Valid U.S. military photo ID	Valid and current U.S. military photo ID
Valid photo employee ID card issued by any branch, department, agency, or entity of the United States government, Georgia, or any county, municipality, board, authority, or other entity of Georgia.	
Valid tribal photo ID	

[a]Ga. Code Ann. § 21-2-417.

131. Note, first, the sheer number of photo identification cards that are acceptable in Georgia, compared to South Carolina. Second, in addition to the difference in the lengths of the two lists of acceptable identification, note the breadth of allowable identification within most of the categories in Georgia. Third, note the difference in wording concerning driver's licenses in the two states — the Georgia license must be "properly issued," whereas the South Carolina license must be "valid and current."

132. The sheer number of allowable photo identification cards means that hundreds of thousands of Georgians likely possess an acceptable photo ID card that is not a driver's license. One example of such individuals is the 318,000 students enrolled in the University System of Georgia who, according to the Georgia Secretary of State's web site, may use their student identification cards to vote.[80]

133. Finally, Professor Hood argues that Act R54 contains factors that "may help to mitigate the effect of this law on racial and ethnic minorities in South Carolina."[81] The first of these is the allowance of voters without photo ID to vote absentee.[82] The critical flaw in this argument is that South Carolina still has a traditionally strict "for cause" absentee voting law, whereas Georgia (which is cited as a state with a comparable law) has a "no-excuse" absentee voting law.

134. The following is the list of categories under which South Carolinians may qualify for an absentee ballot, taken from the South Carolina Election Commission's web site.[83]

- Persons who will be on vacation outside their county of residence on Election Day
- Members of the Uniformed Services or Merchant Marine, and their spouses and dependents residing with them
- Persons who, for reasons of employment, will not be able to vote on election day
- Physically disabled persons
- Persons sixty-five years of age or older
- Persons serving as a juror in state or federal court on Election Day
- Persons admitted to the hospital as emergency patients on day of election or within a four-day period before the election
- Persons with a death or funeral in the family within three days before the election
- Persons confined to a jail or pre-trial facility pending disposition of arrest or trial

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[80] "University System Fall Enrollment Hits A Record Of 318,027 Students," press release, Nov. 16, 2011, http://www.usg.edu/news/release/university_system_fall_enrollment_hits_a_record_of_318027_students/. See also Georgia Secretary of State, "Georgia Photo ID Frequently Asked Questions," http://sos.georgia.gov/gaphotoid/Printable_FAQ.pdf, for a list of state colleges and universities whose identification cards are acceptable for voting.

[81] Hood Declaration, at 18.

[82] Professor Hood acknowledges the limitation of this remedy in his Supplemental Report. *See* Hood Supplemental Declaration, at 11.

[83] "Absentee Voting | SCVotes.org," http://www.scvotes.org/2009/10/15/absentee_voting.

- Persons attending sick or physically disabled persons
- Certified poll watchers, poll managers, and county election officials working on Election Day

135. None of the legitimate reasons listed here is "persons who fail to possess the requisite photo in order to vote in person." Therefore, any voter without the requisite ID will still need to meet one of these requirements. Absentee balloting is simply not a remedy specifically designed to accommodate voters who do not possess the photo voter IDs required under Act R54.

136. Nor is absentee voting an equivalent substitute for voting in-person, on Election Day. First, voters who vote absentee express greater uncertainty that their votes will be counted as cast. Evidence for this is found in the Survey of the Performance of American Election (SPAE), the first nationwide study that focused on voting administration issues, which I helped to conduct in 2008.[84] In that survey, which was administered immediately after the 2008 election, 75% of Election Day voters answered that they were "very confident" their votes were counted as cast, compared to 60% of absentee voters.[85] Among South Carolina voters, 73% of Election Day voters answered they were "very confident" their votes were counted as cast, compared to 55.8% of absentee voters.[86]

137. Moreover, there is evidence, based on research I have published, that absentee voting produce more "lost votes" than in-person voting. The term "lost votes" was used in the

[84] R. Michael Alvarez, Stephen Ansolabehere, Adam Berinsky, Garbriel Lenz, Charles Stewart III, and Thad Hall, 2008 Survey of the Performance of American Elections: Final Report (hereinafter "SPAE Final Report"). http://vote.caltech.edu/sites/default/files/Final%20report20090218.pdf

[85] SPAE Final Report, at 30. This difference in confidence levels is significant at a *p*-value of less than .05%. The χ^2 statistic is 145.2, with 1 degree of freedom.

[86] The difference in confidence levels is significant at a *p*-value of 4.1%. The χ^2 statistic is 4.2, with 1 degree of freedom. I derived this estimate from an analysis using the 2008 SPAE data file.

Caltech/MIT Voting Technology Project's (VTP) 2001 report, *Voting: What Is/What Could Be*,[87] to refer to what happens when an eligible and registered voter does everything "right" to cast a ballot, and yet the ballot is not counted in an election. A well-known example would be a voter using a pre-scored punch card voting device leaving a "hanging chad" that subsequently obscured the hole in the card indicating the voter's choice when the ballot was run through the counting device, leaving the ballot recorded as an "under-vote." Another cause of lost votes could be a registered voter being turned away from the polls because a mistake had removed the voter from the voting rolls.

138. In a law review article published in 2010, I extended the VTP's analysis to mail-in absentee voting.[88] That article relied on the metaphor of a pipeline that carries the intentions of voters from the moment they decide positively to vote, to the point at which the vote is cast. Any impediment along the way that thwarts the voter's intent is called a "leak." Using data from two sources — the U.S. Election Assistance Commission's (EAC) Election Administration and Voting Survey (EAVS) and the SPAE discussed above[89] — I estimate that among 35.3 million mail ballots requested in the 2008 general election, 3.9 million were never received by the voters who requested them, 2.9 million were not returned back to election officials for counting, and 800,000 ballots were rejected for counting.[90] This yields an estimate of 7.6 million ballots that left the absentee ballot pipeline somewhere along the way, from the requesting of ballots to their counting, which amounts to 21% of all requests. This contrasts with the VTP estimate of no more than 6% lost votes in the 2000 general election.[91]

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[87] Caltech/MIT Voting Technology Project, Voting: What Is/What Could Be, at 8, 9 (2001) (hereinafter "Caltech/MIT Report").
[88] Charles Stewart III, *Losing Votes by Mail*, 13 N.Y.U. J. LEGIS. & PUB. POL'Y, 573 (2010).
[89] *See supra* ¶ 136.
[90] Stewart, at 589.
[91] Caltech/MIT Report, at 87. The Caltech/MIT Report estimates that between 4 and 6 million votes were lost in the 2000 general election. With 105 million ballots cast in 2000, this amounts to a rate of between 3.8% and 5.7%.

139. Therefore, a shift to absentee voting among voters who would prefer to vote in-person will subject them to greater uncertainty about whether their vote was actually counted as cast.

140. In Professor Hood's supplemental report, he argues that the number of registered voters who might be adversely affected by Act R54 is diminished, because some registered voters without a driver's license of SCDMV-issued photo ID card are 65 years-of-age or older. Because voters in South Carolina who are 65 and older may vote absentee on account of their age, anyone of this age group without the requisite photo ID to vote in person could simply vote a "no excuse" absentee ballot.[92]

141. The arguments I make in paragraphs 136 to 139, above, about the lack of equivalence between in-person and absentee voting, apply regardless of age. In addition, despite the fact that South Carolina voters 65-and-older may currently vote a "no-excuse" absentee ballot, the vast majority do not, which is an indication of the strong preference among these voters to do so in person. In the 2008 general election, 8.6% of voters 65-and-older voted absentee, compared to 4.7% of voters who were younger than 65.[93] In the 2010 general election, 4.9% of voters 65-and-older voted absentee, compared to 1.7% of voters who were younger than 65.[94]

142. Thus, while South Carolina's absentee ballot law currently leads to a higher rate of absentee voting among those older than 65, compared to younger voters, the vast majority of the older set of voters still "vote with their feet" by choosing to vote in-person on Election Day.

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[92] Hood Supplemental Declaration, at 11–14.

[93] To conduct this analysis I, first, merged records of voters in the 2008 and 2010 general elections using the voter participation file I received from the State of South Carolina with the voter list file. To deal with the handful of records in which birthdates are clearly in error, I confine myself here to voters with ages between 18 and 100, inclusive.

The $\chi 2$ test statistic of this relationship is 33,000, with 1 degree of freedom, with a *p*-value of less than 0.05%.

[94] The $\chi 2$ test statistic of this relationship is 25,000, with 1 degree of freedom, with a *p*-value of less than 0.05%.

143. In introducing the possibility that voters 65 and older may vote a no-excuse absentee ballot, it is important to note that because African American registrants are, on average, younger than white registrants, this is a remedy that is more likely to be available to whites than to African Americans. In the 2008 general election, for instance, 21.4% of African American voter were 65 or older, compared to 29.5% of white voters.[95] In the 2010 general election, 23.1% of African American voters were 65 or older, compared to 31.9% of white voters.[96]

144. Thus, while this provision of the absentee law may reduce the *number* of individuals affected by Act R54, to the degree older voters avail themselves of this option, the racial disparities inherent in the law will only be compounded.

145. In addition, Professor Hood argues that voters without the requisite ID will be allowed to cast a provisional ballot that *will be counted* once a proper ID is produced within the deadline provided by law. In addition, any registrant with a religious objection to being photographed or who has a "reasonable impediment" to procuring the requisite ID will be allowed to cast a provisional ballot upon signing an affidavit that *will be* converted into a regular ballot, unless the local elections board believes the affidavit is false. Professor Hood also states that the State *will* launch a voter education program designed to inform registrants of the new law, and *will* begin a process of providing free voter registration cards containing photographs on them, to any who lack a proper ID for voting. All of these claims are based on predictions about future behavior of the State of South Carolina, not on the analysis of the actual behavior of the State. Therefore, these statements are speculation, and cannot be evaluated empirically.

[95] The $\chi 2$ test statistic of this relationship is 58,000, with 7 degrees of freedom (testing the relationship using registrants of all races), with a *p*-value of less than 0.05%.
[96] The $\chi 2$ test statistic of this relationship is 65,000, with 7 degrees of freedom (testing the relationship using registrants of all races), with a *p*-value of less than 0.05%.

146. On the whole, the restrictive quality of the identification allowed under the photo voter ID law reflected in Act R54 makes comparisons with Georgia's laws inapposite. South Carolina admits to a significantly shorter list of allowable identification cards. There is less flexibility provided for people whose driver's license may have expired or not reflect the voter's current address. South Carolina's election law does not allow voters to use an absentee ballot solely because they fail to possess the photo ID necessary to vote in person. The absentee ballot laws in South Carolina do not present a viable voting alternative for those who do not possess a driver's license. Finally, there is no empirical evidence available that can help to judge the effectiveness of any ameliorative efforts the State might choose to undertake in order to overcome the fact that racial disparities exist in who does and does not possess the requisite identification needed to vote.

Conclusions

147. The original Declaration of Professor Hood provides an inaccurate estimate of the racial disparities regarding the possession of the of the requisite photographic identification under Act R54, due to his failure to account for registrants who have had their licenses returned to the SCDMV from jurisdictions outside of South Carolina.

148. In neither his original Declaration nor Supplemental Declaration does Professor Hood provide tests of statistical significance, to quantify the degree to which differences in measured burdens between white and African American registrants could have occurred due to random chance. Further, in Professor Hood's Supplemental Declaration, he inappropriately focuses on *numbers* of adversely affected registrants by race, rather than on *proportions.*

149. Once one accounts for South Carolina residents who have military photo IDs and passports, which are also allowable identification under Act R54, racial disparities in the possession of acceptable identification under the Act increases.

150. Finally, Professor Hood's contention that the experience of Georgia when it implemented a photo voter ID law in 2008 provides benign evidence of the disparate racial effects of South Carolina's Act R54 is incorrect, because the research design of the principal study he cites is inadequate for him to draw the conclusion he reaches, and because the Georgia law is significantly more flexible in its construction than Act R54.

I declare under penalty of perjury that the foregoing is true and correct. Executed this 6 day of August, 2012.

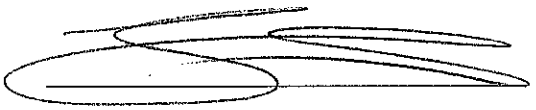

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Exhibit J

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EDUCATION

Harvard University	Ph.D., Political Science	1989
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PROFESSIONAL EXPERIENCE

ACADEMIC POSITIONS

2008-present	Professor, Department of Government, Harvard University
1998-2009	Elting Morison Professor, Department of Political Science, MIT (Associate Head, 2001-2005)
1995-1998	Associate Professor, Department of Political Science, MIT
1993-1994	National Fellow, The Hoover Institution
1989-1993	Assistant Professor, Department of Political Science, University of California, Los Angeles

FELLOWSHIPS AND HONORS

American Academy of Arts and Sciences	2007
Carnegie Scholar	2000-02
Goldsmith Book Prize for *Going Negative*	1996
National Fellow, The Hoover Institution	1993-94
Harry S. Truman Fellowship	1982-86

PUBLICATIONS

Books

2014 *Cheap and Clean: How Americans Think About Energy in the Age of Global Warming*. (with David Konisky). MIT Press.

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1999 "Why did a majority of Californians vote to lower their own power?" (with James

Snyder and Jonathan Woon). Paper presented at the annual meeting of the American Political Science Association, Atlanta, GA, September, 1999. Paper received the award for the best paper on Representation at the 1999 Annual Meeting of the APSA.

1999 "Has Television Increased the Cost of Campaigns?" (with Alan Gerber and James Snyder).

1996 "Money, Elections, and Candidate Quality," (with James Snyder).

1996 "Party Platform Choice - Single- Member District and Party-List Systems,"(with James Snyder).

1995 "Messages Forgotten" (with Shanto Iyengar).

1994 "Consumer Contributors and the Returns to Fundraising: A Microeconomic Analysis," (with Alan Gerber), presented at the Annual Meeting of the American Political Science Association, September.

1992 "Biases in Ecological Regression," (with R. Douglas Rivers) August, (revised February 1994). Presented at the Midwest Political Science Association Meetings, April 1994, Chicago, IL.

1992 "Using Aggregate Data to Correct Nonresponse and Misreporting in Surveys" (with R. Douglas Rivers). Presented at the annual meeting of the Political Methodology Group, Cambridge, Massachusetts, July.

1991 "The Electoral Effects of Issues and Attacks in Campaign Advertising" (with Shanto Iyengar). Presented at the Annual Meeting of the American Political Science Association, Washington, DC.

1991 "Television Advertising as Campaign Strategy: Some Experimental Evidence" (with Shanto Iyengar). Presented at the Annual Meeting of the American Association for Public Opinion Research, Phoenix.

1991 "Why Candidates Attack: Effects of Televised Advertising in the 1990 California Gubernatorial Campaign," (with Shanto Iyengar). Presented at the Annual Meeting of the Western Political Science Association, Seattle, March.

1990 "Winning is Easy, But It Sure Ain't Cheap." Working Paper #90-4, Center for the American Politics and Public Policy, UCLA. Presented at the Political Science Departments at Rochester University and the University of Chicago.

Research Grants

1989-1990	Markle Foundation. "A Study of the Effects of Advertising in the 1990 California Gubernatorial Campaign." Amount: $50,000
1991-1993	Markle Foundation. "An Experimental Study of the Effects of Campaign Advertising." Amount: $150,000
1991-1993	NSF. "An Experimental Study of the Effects of Advertising in the 1992 California Senate Electoral." Amount: $100,000
1994-1995	MIT Provost Fund. "Money in Elections: A Study of the Effects of Money on Electoral Competition." Amount: $40,000
1996-1997	National Science Foundation. "Campaign Finance and Political Representation." Amount: $50,000
1997	National Science Foundation. "Party Platforms: A Theoretical Investigation of Party Competition Through Platform Choice." Amount: $40,000
1997-1998	National Science Foundation. "The Legislative Connection in Congressional Campaign Finance. Amount: $150,000
1999-2000	MIT Provost Fund. "Districting and Representation." Amount: $20,000.
1999-2002	Sloan Foundation. "Congressional Staff Seminar." Amount: $156,000.
2000-2001	Carnegie Corporation. "The Caltech/MIT Voting Technology Project." Amount: $253,000.
2001-2002	Carnegie Corporation. "Dissemination of Voting Technology Information." Amount: $200,000.
2003-2005	National Science Foundation. "State Elections Data Project." Amount: $256,000.
2003-2004	Carnegie Corporation. "Internet Voting." Amount: $279,000.
2003-2005	Knight Foundation. "Accessibility and Security of Voting Systems." Amount: $450,000.
2006-2008	National Science Foundation, "Primary Election Data Project"
2008-2009	Pew/JEHT. "Measuring Voting Problems in Primary Elections, A National Survey." Amount: $300,000
2008-2009	Pew/JEHT. "Comprehensive Assessment of the Quality of Voter Registration

Lists in the United States: A pilot study proposal" (with Alan Gerber). Amount: $100,000.

2010-2011 National Science Foundation, "Cooperative Congressional Election Study," $360,000

2010-2012 Sloan Foundation, "Precinct-Level U. S. Election Data," $240,000.

2012-2014 National Science Foundation, "Cooperative Congressional Election Study, 2010-2012 Panel Study" $425,000

2012-2014 National Science Foundation, "2012 Cooperative Congressional Election Study," $475,000

Professional Boards

Editor, Cambridge University Press Book Series, Political Economy of Institutions and Decisions, 2006-present

Member, Board of the Reuters International School of Journalism, Oxford University, 2007 to present.

Member, Academic Advisory Board, Electoral Integrity Project, 2012 to present.

Contributing Editor, *Boston Review*, The State of the Nation.

Member, Board of Overseers, American National Election Studies, 1999 - 2013.

Associate Editor, Public Opinion Quarterly, 2012 to 2013.

Editorial Board of American Journal of Political Science, 2005 to present.
Editorial Board of Legislative Studies Quarterly, 2005 to present.
Editorial Board of Public Opinion Quarterly, 2006 to present.
Editorial Board of the Election Law Journal, 2002 to present.
Editorial Board of the Harvard International Journal of Press/Politics, 1996 to 2008.
Editorial Board of Business and Politics, 2002 to Present.
Scientific Advisory Board, Polimetrix, 2004 to 2006.

Special Projects and Task Forces

Principal Investigator, Cooperative Congressional Election Study, 2005 – present.

CBS News Election Decision Desk, 2006-present

Co-Director, Caltech/MIT Voting Technology Project, 2000-2004.

Co-Organizer, MIT Seminar for Senior Congressional and Executive Staff, 1996-2007.

MIT Energy Innovation Study, 2009-2010.
MIT Energy Initiative, Steering Council, 2007-2008
MIT Coal Study, 2004-2006.
MIT Energy Research Council, 2005-2006.
MIT Nuclear Study, 2002-2004.
Harvard University Center on the Environment, Council, 2009-present